EFFECTIVE REPORT WRITING

OTHER PUBLICATIONS OF
MMC SCHOOL OF MANAGEMENT

Public Speaking: Committee Meetings

Read Faster Read Better

Rapid Reading: Exercise Manual

The You and I in Business

How to Develop a Winning Voice Build Organisations Image and Make a Sale over the Telephone

The Job of the Personal Assistant

Law for Factory Executives (English and Hindi)

How to Select Well: Thought Processes, Techniques and Tools

The Executive Skill of Persuasive Listening

Organisation and Administration of Research & Development

Management by Implications

A Creative Approach to Problems of Discipline

Written Communication and Results

So the Business System may Survive in India:

A Ten-point Programme

EFFECTIVE REPORT WRITING

N. H. ATTHREYA

MMC SCHOOL OF MANAGEMENT
BOMBAY 20

First edition: December 1971

PRICE: Rs 19.50 OUTSIDE INDIA: U S. $ 4.00

This book is presented in the "Phrase Reading" format to facilitate speed of comprehension

PRINTED IN INDIA
By J J. Khambatta at THE ATHENÆUM PRESS, Swadeshi Mills Estate, Girgaum, Bombay-4, and published by K. Venkataraman, Director, MMC School of Management, 3E1 Court Chambers, New Marine Lines, Bombay-20

PREFACE

Reports draw their strength and weakness
from the people who prepare and use them—
skilled writers **and** skilled readers

This book seeks to serve the needs of
report-sensitive individuals—
those who know how to write reports **and**
those who know how to use reports
that others have written.

I checked with a number of readers of reports—
to get the delivery-end point of view;
and I have spelt out their requirements
in terms of guide lines
on major and minor aspects of report writing

To illustrate their requirements further,
I have reproduced a number of reports
that have won the approval of the readers in question

I have examined here the formal report in detail
not because day-to-day work
may call more for such a report.
I felt that once we know the more complex
and the more detailed form of report writing,
we will know how to slant
a particular report to the situational needs.
Such an examination will enable us make
a better job of smaller, informal and even routine reports
To use an analogy, knowledge of logarithms
is not essential for using a slide rule;
but a person knowing logarithms uses a slide rule
more effectively and effortlessly.

One point I am not referring to in the text,
and that concerns the reader of a report

A report is a communication medium.
One way to make it effective as a communication medium
is for the two parties—the writer and the user—
to give their best and get the best from the medium.

This primarily means that the user takes the initiative.
However well a report is written,
if the user does not do his creative part,
if he takes a casual approach to it,
good reports may not be written at all in that organisation:
and if written, may not continue to be written for long.

Report writing takes effort and time.
It is well for the user
to get the best out of the investment.

I commend then this book
as much to the readers of reports
as to the writers of reports.

My grateful thanks are due to a number of authorities on the subject and in particular to David M Robinson (Writing Reports for Management Decisions) Arnold B Sklare (Creative Report Writing) Robert E Tuttle, C A. Brown (Writing Useful Reports) Charles E Van Hagan (Report Writers Handbook) Reginol O Kapp (The Presentation of Technical Information) and Raymond V. Lesikar (Report Writing for Business). I learnt a great deal from these authorities on the subject Professional ethics (as a consultant) do not permit me use some of the reports I prepared I am particularly thankful, therefore, to the executives (R. D. Aga and Arvind R. Doshi) and their companies that permitted me to use some of their company material. Professor S S Rege, Mr R N Sharma, Mr A B Mangaokar and Miss S Koppikar helped me with the bibliography and the appendix material My thanks to them. And finally my thanks to Professor Nissim Ezekiel and V. S. Bhave who perused the mss and helped me with valuable editorial guidance

October 1971

N H ATTHREYA

Contents

Contents

1

THE COMMUNICATION CIRCUIT

"Did you post that card?"
"I did, sir, but why do you ask me?"
"I just wanted to make certain."

My attendant thought he had done his job
when he posted the letter
in the mail box, as instructed.
And he was right
so far as the job itself was concerned.
He did not, however, recognise that
there is a communication circuit aspect to every job.
I expected from him a **reporting back,**
like "I have done it."
May be I was wrong to expect
that reporting back
If I was, I can only excuse myself by saying:
most people are wrong that way.

Communication circuit is complete
only when there is a reporting back,
At least in working situations,
those who initiate a communication
do expect a reporting back—
even if the job has been executed well and in time.

Relating this phenomenon to our own work,
we may ask ourselves a few questions:

> On what matters may my senior, junior, colleague or other person legitimately expect

Let me have all your questions first
and I will try to answer them when I share
my information on the subject with you.
Still others may say:
If you have any specific questions to ask me,
I will consider them first.

Some people tend to be vague in their answers
to questions— at times deliberately so.
There are others who are vague
but do not mean it that way.
In the latter case,
we would do well to ask specific questions
in the course of our supplementaries.
People give of their best
if the interview is an informal,
flexible, conversational situation,
instead of a formal, over-structured drill,
and handled in too skilled a fashion.

The interviewing skill is
an important skill for a report-writer.

To develop the interviewing skill—**
like developing any other skill—
it takes time but it is time well spent
to advance our career.

** Please refer to the author's book *How to Select Well* (Section 6).

8-4

THE QUESTIONNAIRE

Since we have the benefit of a dialogue,
we get more out of an interview
than a questionnaire.
In some situations, as for example,
where we have to cover a lot more people
located at different places in a lot less time,
only a questionnaire is practicable.

The questionnaire has its **advantages.**
One, of course, is the low cost.
Another is that we can ask the same questions,
the same way, in the same order ;
and we can readily tabulate the answers.

Even a well-designed questionnaire
does not reduce its inherent **limitations,**
much less its particular limitations.

Experience in India shows
that few questionnairies are returned,
few returned in time,
and even of those returned
only a few are filled in properly.
(This position may improve
in the years to come).

Some readers perhaps find it difficult
to express themselves on paper ;
some may be reluctant
to 'commit' themselves on paper ;

many think the questionnaire
can wait indefinitely ;
and the rest—the large majority—
treat it as a plain disturbance of the peace.

Designing a questionnaire calls for skill.

However skillfully
the questionnaire is designed,
because of its inherent
and particular limitations,
it is not as accurate a source of information
as the patterned interview.
A personal meeting
is called for in most cases.

Some recommended guidelines
in preparing a questionnaire are:

1. Questions should be asked in some logical order.

2. Interesting questions should be used to advantage.

3. Difficult questions should be given proper emphasis.

4. Questions should be easy to understand.

5. Questions should ask only for the necessary information.

6. Questions should request only information which the respondent will be able to provide.

7. Questions should ask for information which the respondent is willing to provide.

8. Guide questions should not lead respendents to provide certain answers.

9. Questions should provide for the various possible responses

10. The questionnaire should be tested for both content and format.

8-5

COLLECTING DATA: THROUGH EXPERIMENTATION

In the case of experimentation,
we have two groups to work with.
One is the 'control' group or the one
that continues operating in the usual way.
The other is the experimental group
or the group which works
with a variable introduced.

In such a case, there is a **hypothesis.**
We change a variable
related to the hypothesis (the cause)
in the experimental group.
We maintain the control group
as it existed before
and measure the effects
associated with the change.

In the experimental and control groups
are identical in all respects,
except for the variable being tested,
the "effect" measured for the experimental group
must be associated with the "cause"—
that is, the variable manipulated;
for example, a salary plus commission plan
is more effective than
the mere salary plan we now have.

Proper measuring techniques
should however be employed
in assessing the results of the experiment.

8-6

COLLECTING DATA : PREVIOUS STUDIES

Previous studies provide
another source of data.

When the organisation is of some size
and where the organisation
has existed for some time,
studies do get conducted in a number of areas.
The initial studies contain
considerable background information.
When subsequent studies are made,
we can avail of the earlier studies.
If filed logically, they are
an economic and unique source of data.

These records (suitably indexed)
form part of an **information cell,**
where the need for it exists.

Hardly a dozen companies in India
seem to have built
an information cell or department.
Since it is a company **resource,**
we would do well to make a beginning,
if we have not already done so.

8-7

COLLECTING DATA: REFERENCE MATERIAL

Libraries provide a source of information.
In a matter of minutes,
we can find a fact in a library
provided we know how to use
the library facilities properly,
and provided too
the library facilities are adequate.

Whichever library—
company, public or special—we use
we would do well
to take the assistance of the librarian.*

Generally, he is
an informed and helpful person.
He is able to readily refer us
to the appropriate handbook, book,
periodical or indexed material.

---

* Please see Appendix for a note on *How to use a Library.*

8-8

NOTE TAKING

We all make notes—
the housewife her shopping list,
the student his class lessons
and the manager his tasks for the day—
and for the same reason:
our original impressions
of the subject matter of our notes fade away
as the hours and days pass by ;
the notes are more reliable under stress ;
and they are available for reference
a longer time.

In a report writing situation
we take notes with a view

a) to collect data ;
b) to record a 'guess' to be referred to later ;
c) to obtain missing details later ;
d) to arrange and use them in the report.

The first two points are obvious ;
the other two need an explanation.
Some data we collect
require further verification
and some of the missing details
may mean a long "lead time."

If they are not highlighted
at the note-taking stage and steps planned,
we may be held up at the drafting stage ;
and our schedules can get upset.

We make notes from our experience,
from listening and talking to others,
from experiment and from observation,
and from reading the relevant literature.

Each person has his own way of taking notes
and so long as it serves the purpose
it is a good enough method.
What is important is
that we make our notes full and clear enough
for us to understand them
when we refer to them again after a time lapse.
With this in view we would do well
to leave sufficient space between items.
For reasons of legibility,
we may record all notes in ink.
Another essential is
that we **record them on the spot.**
Where possible,
we may use sketches and diagrams.

When we learn of a new item of information,
if we make a permanent record of it,
we can save ourselves
hours of search and checking back later.
There are many methods of keeping a record—
from the cumbersome
both-pages 'note-book' method
to the machine-punched card method.

We should choose a method
that is desirable and feasible for us,
a method that will facilitate
the process of sorting, comparing,
digesting and interpreting.

One standard method is to jot down
the points on a "3 by 5" card or thick paper.
Each note would contain a brief descriptive title,
the date, source, and the desired data.
Such a standardized form permits
flexible handling of the data.
Writing then becomes
more a matter of expanding the notations
to compile the body of the report.
Where references are called for in the report
this form comes handy.
Additional advantages are
that they can be 'filed' suitably
and used for future reference.

Till we develop the report writing skill,
we will tend to make more notes than we need.
We will also copy whole passages
from books and articles instead of
taking down the points, in our own words.

While we should exercise discretion,
it is better to err on the liberal side,
to have a little more detail than necessary.
(It is easier to discard than to collect afresh).

We can use quotations ;
only we should take care to give credit.
Where copyright material is involved
and the report is likely to be published,
we may have to obtain permission
from the copyright holders.

Note-taking proves ticklish
when we interview people.
On the one hand,
without taking notes on the spot,
we may miss some of the facts.
On the other, the interviewees
tend to feel cramped
when they find notes being taken.
The answer lies in taking their consent
and making notes in a not-too-obvious fashion.
Some interviewers may even give us enough time
to take detailed notes.
We would, however, do well
to resort to abbreviations
(a consistent system of abbreviations).
If feasible, we may use a gadget like
a portable cassette taperecorder.

9

ORGANISING THE REPORT

Logical organisation facilitates
the reading of a report.

A report has many parts
all of which come under
the following three headings:

The preliminary part or front matter
The main part or body
The closing part or back matter

The sub-sections are

Front Matter:

Cover
Flyleaf
Frontispiece
Titlepage
Copyright statement
Letter of authorization
Letter of acceptance
Letter of approval
Letter of transmittal
Dedication
Foreword
Introduction
Acknowledgements
Table of contents
Table of illustrations

The Body
- Synopsis
- Materials and Methods
- Discussion and Commentary
- Foot Notes
- Section Headings
- Emphasis
- Summary
- The Object
- Conclusions
- Recommendations

Back Matter
- Appendices
- Bibliography
- Reference List
- Test data
- Glossary
- Nomenclature
- Index
- General

Only some special reports use
the complete format.
Most reports use only such parts
as are relevant to their specific needs.
For example, a short report will do
without a table of contents ;
and an informative report
may not carry a summary.
Which way to organise a report
calls for discretion on our part.

Organisation depends on
the needs of the reader,
the purpose of the report
and the type of the report.
If the report has
more than one type of reader,
we may slant our writing
to the more important or the primary audience.

9-1

PARTS OF A REPORT : FRONT MATTER

Every report need not carry
all the subsections of the three parts.
We use our judgment to decide
what to include.
To do so, however, we should have
a fair idea of what is what and why,
and hence this section and the following two.

FRONT MATTER

COVER

This is to identify and protect the report.
The cover should contain enough information
so that a reader knows exactly
what report he has in his hand
without opening it.

The information on the cover
enables the librarian
to help others who may be seeking it.

Standard format of a cover is:

1. Title in clear and usually bold letters slightly above the centre of the cover as a rule.

2. Organisation's name near the lower part of the cover.

3. The series (and copy number) in upper right corner, if any.

Some minor points are:

a. The cover must be durable.

b. The colour of the cover should be dignified, not garish.

c. Clutter should be avoided.

d. 'O's and 'I's as code numbers should be avoided because of the likely confusion with numbers.

FLYLEAF

This is a blank sheet of paper
preceding the title page
to enhance the appearance of the report.

FRONTISPIECE

This faces the title page and may
consist of a drawing or chart
closely relating to the subject of the report.
Its purpose is to heighten
the interest of the reader.
This rarely appears in an internal report.

TITLE PAGE

This is to give some basic information
to the reader;
this is also to facilitate filing.
This carries

a. The title — descriptive (remember the librarian too) and in a telegraphic style; there may also be a sub-title.

b. The names of the authors.

9-2

THE BODY

In this core of the report
we relate in detail
our analysis of the subject,
our interpretation of the facts,
and our discussion of the results.

In the case of technical or research report,
this section may start with a synopsis.

SYNOPSIS:

This is an abbreviated statement
containing the gist of a report.
It gives an overall view of the whole plan
and main substance of the report.
This also helps in preparing
the abstract for research reports.

MATERIALS AND METHODS:

We divide the study into logical parts and
discuss each part in sequence.

The body consists of
1) the preliminary section
2) the several sections in which
analytical information is presented,
and
3) the conclusions and recommendations
section.

We tell the reader
what materials we had to work with
(figures, dates, people, etc.,)
and what we did with them—
in expository fashion.

DISCUSSION AND COMMENTARY.

We explain in detail
how we subjected the given materials to
specific procedures, processes and operations
according to a purposeful method.

We scrutinise the results analytically
and interpret them.

We then tell what we think all this means,
what should be understood by it and,
according to us, what should be done about it

The body of the report should read
as a continuous, logical, cohesive whole.

All essential data leading to the conclusion
must be placed here in logical order.

For the reader to follow
the **main** thread of facts and analysis,
it should not be necessary for him
to refer to an appendix
or to other sections of the report.

FOOT NOTES

Foot notes present information that supports
but is not essential to our main discussion.
These notes are additional bits of information
to aid the reader
in understanding or appreciating the text.

Only a section of the readers may be interested in these bits of information,
so we remove them from the body of the text and place them at the bottom of the page.

There are two types of foot notes:
the comment type
and the bibliographic type.

An example of the comment type would be

As stated in a personal letter to the author by............................dated............. ......

An example of bibliographic type would be:

Van Hagan, Charles E., *Report writers Handbook,* Prentice Hall Inc., New York, 1961. P. 51

If the references are few (say under 6)
they are given in the text itself;
otherwise, at the end in a separate section.

To save repeat information,
certain abbreviations are used, namely,

Ibid (ibidem), in the same place
loc.cit. (loco citato), in the place cited
op.cit. (opere citato), in the work cited.

SECTION HEADINGS

Section headings show quickly
the relation of one section
to those that precede and follow it.

They help readability
by visibly breaking up the otherwise heavy
blocks of the text.

In presenting headings,
sub-headings and sub-sub-headings,
consistency helps the reader.

Numbering comes in handy here.

EMPHASIS:

When we wish to emphasize certain points,
we may adopt many methods.
One is that of the displayed text—
a format different from the running text.
Underlining, capitalising or indenting
are examples.

Whatever the device,
we have to use it sparingly.
Otherwise,
the purpose of the emphasis is lost.

SUMMARY:

This section aims to give the reader
an overall view of the report,
to interpret the findings
in the body of the report,
to take the reader
from the parts to the whole.
It describes in a condensed form
the points the report makes.
There are indications to show
that the body of the report
includes facts substantiating the summary.

Because this part invariably gets read,
it should be factual, concise
and particularly well-written.

The sub-sections are:
The object of the report
The conclusions
The recommendations

These answer the questions:
What is the purpose of the study?
What was found in the study?
What should be done?

THE OBJECT.

A brief but complete statement is made explaining the purpose of the report.

CONCLUSIONS

Conclusions point out
what was found in or determined
by the study.
In effect, they say:
"In the light of the data
and indications uncovered in this study,
I found . . . "
They are specific and positive statements.

Each conclusion
is given a number and enumerated.
There is a supporting statement
to recall the factual evidence
given in the report.

RECOMMENDATIONS:

The writer uses the conclusions
as a basis of judgement
to recommend a course of action.
Like any other communication,
report writing has an **action purpose,**
namely,
that the recommendations
should be implemented.
This is possible
only when the recommendations are
logically developed,
specific, concrete, positive and clear
but **not** overbearing.

In analytical reports,
conclusions (extensive) precede recommendations.
In informational reports,
where the conclusion is
chiefly in the nature of a summary,
it often follows the recommendations.

Stemming out of the analysis,
certain recommendations emerge.
Conclusions and recommendations
may be in the preliminary section,
final section, or both
Repetition **can** be helpful.

Recommendations must be presented
courageously, confidently, and unequivocally

Preceding a recommendation by
" From our experience, we recommend........"
" Our opinion is to prefer..........."
indicates poor work.
If all work had been done well,
references to experience and opinions
are not necessary
to justify the recommendations made.

Of course,
no amount of 'good' report writing
can cover up poor work done
in arriving at the recommendations.

Many prefer to emphasize their recommendations
by ordering them logically
by number or letter
and by presenting them
in the imperative mood of the verb.

In recommending specific action,
the writer should anticipate questions
that may occur to the reader.
In particular,
the questions will relate to
the cost and human implications
as also the policy of the organisation
and its practical difficulties.
We should make clear that
these implications have been
indeed taken into account.

In most cases, in this section, we

a) summarize our major findings
b) draw conclusions from our work, and
c) make recommendations based upon
the material that we have presented.

In some cases,
we may have to propose a course of action,
stating its advantages and disadvantages.

We should not introduce a new idea
in the closing section.
Everything we say here
should be supported by information
that we have **already** presented.

The summary in the closing section
is much more detailed
than in the opening section.
The information here may be repeated
in the opening section of the report.
And such duplications are **useful.**

9-3

BACK MATTER

APPENDIX:

An intelligently selective
and well-organised appendix
permits the reader
to form his own judgements
regarding the soundness of the conclusions
and recommendations in the report
and thereby assure himself
about the competence of the report writer
and the authority of what has been written.
In some reports,
it is an integral part of the central report,
as the details need not all be shown
in the body of it.

In preparing a report
we find we have information
which is useful
but which is of a background nature
and, therefore,
does not belong to the body of the report.

Or, we may have details
that are of interest only to some ;
or which may be too long and
'interrupt' the flow of thoughts and arguments
in the body of the report.

Such information finds place in the appendix.

The primary audience will determine
how much of the information
will appear in the appendix.

What goes into the appendix ?
Any carefully selected material
which will serve to illuminate the text
and to verify its accuracy
goes into the appendix.
This may include, for example,
copies and records of all communications
central to the development of ideas
and information put forward by the report.
For example, questionnaires,
illustrative material,
and statistical information
in logical support of the premises of the report,
formulas or mathematical computations.
Each appendix is labelled A, B, etc.
if they deal with different matters.
Also, details not included in the body
though part of the main report.
For example,
sales are divided
into four main zones — N, S, E & W ;
appendix gives the allocation
of the Depots to the zones.

BIBLIOGRAPHY:

This is a compilation of
all the printed works used
in the preparation of the report.

It is offered so that
the reader may verify original sources
if he chooses
and so that the authors of future reports
may find in one listing
all the available material on the subject.
Cumulative knowledge of a subject
is thus gained,
and repetition of searches is avoided.
Bibliographies are presented alphabetically
according to the last names of authors
e.g.

Van Hagan, Charles E
Report Writers Handbook
Prentice Hall Inc., New York, 1961.

They are,
if comprised of many entries,
broken into sections.
These may be units
listing books, manuals, articles,
and reference works.

CITED REFERENCES:

The writer may choose to offer
a list composed only of references cited.
If they are **few,**
they may be given as footnotes.

In a technical or scientific report,
the reader should be able to
obtain a copy of the items listed for study.

We should give therefore
sufficient data, namely,
authors, title, name of publisher,
place and date of publication,
edition number,
volume and issue number (for journals)
number of pages and page number
of the book or periodical mentioned.

To be able to do this,
every time we take notes
from a publication,
we should identify the source
and jot it down then and there.
If we fail to do so,
we may run the risk of wasting time
in searching for information,
while writing the report.

We should avoid padding this list
a suspicion that
the list is padded
may extend to other parts of the report.

We do not normally include
unpublished items.

We should avoid second hand references ;
we should verify every reference
before we include it.

DETAILED TEST DATA:

These include graphic illustrations,
drawings, photographs and statistical tables,
full quotations,
details of working or mathematical details.

These should be relevant
to the understanding of the report.
Obviously, their value is not to make the volume
look more sumptuous.

GLOSSARY:

However simply we may write,
in technical and scientific reports,
we have to use terms
which may not be familiar to the average reader.
If such words are few,
we explain them in the foot notes.
If they are many,
we give them in the appendix.

This is a partial dictionary in which
special terms are listed alphabetically
and defined or explained.
This applies to reports
that contain **a number** of words
our readers may not understand,
for those outside our special discipline.

NOMENCLATURE:

A list of the nomenclature,
unfamiliar to some readers
that we have used in our report,
will help them to understand it.

When many symbols are used,
they too should be listed and identified.

INDEX:

Reports of unusual length and complexity,
dealing with a multiplicity of data
and destined for wide reading, require an index.
The purpose is
to increase the usefulness of the report.
The index is
a detailed alphabetical key to the topics,
names and places in the report,
with their reference to page location.

The location of the index
is at the back of the report,
prior to the bibliography.

GENERAL:

It is customary to start each appendix
on a new page.

The numbering of all series
should continue consecutively
from the report proper
through all the appendices.
This includes
the numbering of pages, figures, tables,
equations, footnotes and references.

Appendices are a logical and integral part
of the report,
and **not** a miscellany.

9-4

PATTERNS OF REPORTS

Analysis of good reports shows
that several patterns are used
to meet specific purposes.
The following are the more common.
We may use one or the other approach
or even a combination of these approaches.

CHRONOLOGICAL PATTERN.

This arrangement is a presentation of events
in the order (time) in which they occurred.
This may apply to reports
which explain business and technical processes.
Interim progress reports
on projects and research work
may also be in this form.
Considerations to be borne in mind are:

1. There should be a controlling purpose for the entire chronology.
2. Selected events require amplification in terms of the interested audience.
3. Each event in the explanation must be suitably linked to the proceeding and following one and to the process as a whole.

SPATIAL PATTERN:

In a spatial arrangement
the exposition moves from area to area
(in space, in function, etc.)
rather than from time to time.

This permits organisation of the report
by geographical section,
by idea, and by function.
Examples are:

1. A report surveying the market potential for a new product.
2. A report exploring ways to raise funds for a hospital.
3. A report outlining the plans of executives to meet a particular target of profit.
4. Instruction manuals.

CAUSAL PATTERN:

The report organized in the causal pattern
moves from cause to effect.
It may answer questions like,
why did this happen or what caused this,
or in given circumstances,
what effect is likely to follow.
Applications would be
a report on a production breakdown,
or a drop in sales or a shop dispute.
The 'why' of the breakdown or sales decline
is established through
the cause-to-effect pattern of arrangement.

INDUCTIVE/DEDUCTIVE PATTERNS:

The basis of induction are facts,
and facts must be
(a) verifiable and
(b) attested by a reliable authority.

When we quote an authority,
we have to ask the following further questions:

1. Is the authority rightly and fully quoted?
2. Is the authority testifying in a field where he is competent?
3. Is the authority supported by other authorities in the same field?
4. Does the authority have a record of success and recognized achievement?

The deductive pattern is structured
to move from a general concept
to a particular case.
But the general concept
should be built soundly on fact.

CLIMATIC IMPORTANCE PATTERN:

This is based on presentation of data
either from the most important
to the least important or vice versa.
Importance is determined
solely by the main purpose of the report.
Thus, if a sales department is asked to give
a half-yearly report of accomplishments,
it may choose the headings:

Most important achievement
Special achievements
Routine activities

and it may be selective and not enumerative.

Many reports, in practice,
adopt the logical sequence
regardless of the chronological order.

LABORATORY RESEARCH:

The outline of the laboratory approach
follows a different pattern.
All data accumulated in such research
falls under one of five possible headings:

Parts and material tested
Apparatus
Procedure
Results
Interpretation

An outline so constructed guides us
in presenting the material.
It also serves as a basis
for formulating the subject headings
and for organising the table of contents.
For further details, the reader is referred to
books on Technical Reporting
listed in the appendix.

10

WRITING THE REPORT

In this last but one stage
we start with a working outline,
go to a zero draft,
and do the necessary revisions.
Sometimes we have to rewrite a few times.
How many drafts we have to prepare
will depend on factors like these:

* importance of the report
* type of report being written
* complexity of the subject matter
* length of time allowed for completion.

Thus, if we have to prepare
a report in an hour,
we may not be able
to even think of a second draft.
If on the other hand there is time
and we are submitting a sales proposal
we may even do three or more drafts.

10-1

THE WORKING OUTLINE

A working outline is to a report writer
what a sketch is to a designer.
It is a planning tool.
Like the blueprint
it should fit specific needs.
It will depend on the subject, the audience,
the purpose and the reasons developed
in the planning of our report.

Remembering that the report is written
for a specific reader, or a group of readers,
we should review the purpose of the report,
and visualise the reader's interests,
attitudes and knowledge of the subject
before we prepare such an outline.

Many approaches have been found
to be useful in making an outline.
One tested approach suggests
five steps and they are:

1. Read research notes carefully—more than once if necessary.

2. Arrange the order of notes—group the notes and regroup them.

3. Give each group **a heading** which is descriptive of all the material contained in the notes. These will be the **sub-headings.**

4. Write the headings and sub-headings on paper in outline form. This is the working outline.

5. Revise the order of notes where necessary.

It does take time to prepare this outline
but it saves in overall time.
It serves as a guide in writing the report,
just as the preliminary outline is useful
as a guide in gathering information.

We should treat this outline only as a guide
and not as a rigid plan.
As we go along, as the text unfolds,
if amendments and improvements
suggest themselves,
we should modify this outline.

A numbering system comes in handy
both to promote clarity
and to make later references easy.
Experience suggests we may go in
for a three-division numbering, e.g. 4.1.3.
If we find a fourth division necessary,
the indication is we may revise
the main headings.

10-2

ZERO DRAFT

Now that we have collected data,
analysed and interpreted the facts,
reached certain conclusions,
made recommendations,
and constructed a working outline,
we are organised to write the report.

The more important reports are written
in four stages — zero draft, first draft,
second draft and final copy.

Zero draft is the one before the first draft.

At this stage,
we do not concern ourselves too much
with uniformity in style or
a grammatical consistency in number, and tense.
Such attention to details, it is found,
interrupts the flow
on one's thought and expression.
The revisions **are** made but later.

**The goal here is to get
the zero draft through.**

Once we have the zero draft on hand,
we can refine it in small instalments.

Experience suggests that
**we get it all on paper
at one uninterrupted sitting**
(of maybe five hours or even more)

That way more is done in less time.
This one sitting approach fecilitates
flow of thought and ease of expression.

We may write in pencil
on alternate lines of a ruled paper
and leave ample margins for corrections.
We know this is only a draft and
we will come back to it
for refining and embellishing.

10-3

SLANTING TO THE READER

Who is the reader
and what is our relationship to him ?

Unless we warn ourselves, we tend to assume that
if **we** know a word, **every reader** must do so ;
that if we can follow
a complex grammatical construction,
every reader can do so too.
This assumption leads us to write
at **our** reading level.
That is, we write as if everyone were
just as expert in the field as we are,
just as familiar with the idea we are expressing,
and just as good in general reading ability.

Obviously, our assumption is not tenable.
Few of our readers will be
as expert in the field as we are.
May be, none of them will be
as close to the facts as we are.
Readers will differ in technical competence,
familiarity with the situation
and even the skill in reading.

Hence the need to write to the readers' level.
Technical content apart,
our writing becomes difficult to understand
if it contains too many 'hard' words
(too long, too technical or too abstract),
'hard' sentences
(too long or where relations are not clear)

or ' hard ' paragraphs
(too long and where the relationship of sentence is not clear).

Researchers have developed methods
to measure the level of difficulty
of a piece of writing
and write a few paragraphs.

We have the option of using
these ' readability formulas '
before or after our writing the report.
It is advisable do it **before.**

We can visualise the level of our readers
and we would do well to use their findings.

We apply one of the readability formulas
to see whether the writing difficulty level
has to be lowered for the current audience.

Please see appendix for the Readability Formulas.

10-4

THE STYLE

Style refers to the way we say
what we have to say.

We saw earlier that our reader is
generally pressed for time—
and sometimes patience.
This means we should make it easy for him
to read and understand the report.

Our style should therefore be simple.
The reader should be able
to grasp the point at once

We can learn from writers in other fields,
particularly popular non-fiction writers.
We see in their work
carefully worked out patterns of organisation,
brilliant sequential unfoldings,
strong transitions,
firm handling of complex parallel processes,
and a sense of order and clearness.

Effective report writers use
the newspaper style of presentation.
In a news story, as we know,
the important points are stated first
and then elaborated or explained.
Additional information that is helpful
but of minor importance is brought in later.

7.

Such a style is clear and readable.

Let us see in some detail
the elements of the style
of effective report writers.

The tradition is to use the impersonal style
when we write long-term, *formal reports.*
The logic is that it adds
to the dignity of the presentation.
Also it permits us to speak for
our **organisation as well as** for ourselves.

In *informal reports*—
which we often have to write—
we can use the conversational, personal style.

WORD USAGE

The words we choose
and the way we put them together
will affect the impact of our report.

When we choose words,
we have to remember the subject.
We should therefore choose
the " right " words
so as to convey the meaning to the reader.

DENOTATION AND CONNOTATION

Words have a specific meaning (denotation)
and also have implied meanings (connotation)
through associations they may carry
in a reader's mind.

Reports are denotative writings
concerned with communicating information.
They abound in concrete and specific terms.*

A writer who wishes to mould opinion will
deliberately choose words with connotations.
A writer who wishes to convey information
will select words which are
relatively free of connotations.

TONE

The report writer's attitude
and posture toward his audience
and toward his material
are reflected by his tone of writing.

The proper tone for report writing
is formal and objective.
This is reflected in choice of words,
sentences, structure, use of metaphor,
and grammatical point of view.

A tone of **positiveness** can be obtained
by disinterestedly permitting
the facts to lead the writer on,
rather than vice versa.
If one can choose by his plan
or method of development in the report
to judiciously weigh
both the good and the bad input of the facts,
that is often the most excellent way to proceed.

---

* Concrete terms name what can be perceived by the senses: definite things, acts, persons or places Abstract terms name ideas and qualities. Thus while 'protectability' refers to a quality, 'shoe' refers to a thing. The difference between specific and general can be illustrated by a simple example like 'Vinoo Mankad' and 'cricketer'.

Also, sentimentality of attitude
toward reader or subject,
though less often seen than false enthusiasm
or writing up and down,
seriously injures the tone of some reports.
Sentimentality consists in displaying
a greater feeling for a thing,
idea, or situation than it reasonably merits.

Our audience is often
an intelligent and informed one,
accustomed to learning by reading.
They resent being talked down to.
What follows, therefore,
does not recommend over-simplification ;
it only recommends clear writing.

Where the audience is a general one
effective report writers
are found to adopt certain approaches.
Here are some:

LANGUAGE.

The effective report writer
aims to express, not impress.
He therefore prefers the clear to the obscure,
the simple to the complex.

He realises that language is a tool
to help the writer transmit
the ideas in his mind to the reader's mind.

The more skilfully he uses the language
the better his chances
of being understood and accepted.

He concedes that readers distrust ideas
they do not readily understand.
He, therefore, gives a second look,
at whatever comes in the way of understanding.

When all is said, report reading is
as difficult as report writing.
Why, he argues, make it more difficult
by being less imaginative ?
Why not make it inviting to read ?

Monotomy is not inviting.
If complexity is added to it,
it is all the more uninviting.
By being a little imaginative,
both these barriers can be avoided.

JARGON:

Jargon is the name given
to the technical or secret vocabulary
of a science, art, trade, sect, profession,
in short, shop talk.

In analysing poorly written reports,
authorities note
that the most obvious defect is ' jargon '.

Jargon finds its way into writing
when the writer makes careless use of language
or tries to make an impression
with big, unfamiliar words.

The following story has been told many times
in one form or another
to show how jargon can conceal
the meaning of a message.

A Detroit plumber wrote a prominent Chicago chemical company that he was using one of their products, hydrochloric acid, for cleaning drains. He asked the firm if the use of the acid was harmless. The company replied: "The efficacy of hydrochloric acid is indisputable, but the chlorine residue is incompatible with metallic permanence."

The plumber wrote back stating that he appreciated the company's interest and that he was happy they agreed with him. The company replied with alarm: "We cannot assume responsibility for the production of toxic and noxious residues with hydrochloric acid, and suggest you use an alternate procedure".

Again the plumber was delighted that the company agreed with him and wrote another letter stating his pleasure. When the company received this third letter, the matter was turned over to another chemist who was told to make sure the plumber understood. The chemist wrote: "Dear sir: Don't use hydrochloric acid. It eats hell out of the pipes"

COHERENCE :

Effective report writers attach
the greatest importance to coherence,
the logical relationship of ideas
within the report.
There must be orderly progression of thought
between sections, paragraphs and sentences.

Towards this end they use headings,
sub-headings and sub-sub-headings
which have been already plannned.

If any part involves a digression
(but a relevant one)
they take the detailed discussion
to the appendix.

THE PARAGRAPHS:

Their paragraphs are easy to read.
They are generally short,
focused on one phase of the subject,
make steady forward progress,
and have clear relationships
between sentence ideas.

They number the paragraphs.

THE SENTENCES:

Their sentences are easily read and understood.

They prefer simple constructions
to complex ones.

Long involved sentences become confusing
when used one after the other.
They use short sentences
with occasional long ones,
the latter to provide variety.

THE EXPRESSIONS .

They play up direct and concrete expressions,
and avoid roundabout and ambiguous ones.
They do not beat about the bush.

They use simple, everyday words
the reader can readily understand.

They prefer the short word,
the formal word and the concrete word.

They play down words
that are vague or abstract and avoidably long.

They avoid overworked words and phrases.*
They avoid strong emotionally-loaded modifiers
such as 'inexcusable' and 'unjust'.
They avoid slang,
and words that may offend the reader.**

THE GRAMMAR AND COMPOSITION

They observe the accepted rules
of English grammar and composition;
and give due attention
to the details of spelling,
punctuation and capitalisation.

They assist the reader
by means of punctuation.

They avoid confusion
in numbers and abbreviations—
both by clarity and by consistency.

THE AIDS

They employ tables and graphs
and other visual wherever possible.

They discuss a subject, figure,
or table only after presenting it.

They define all unusual terms and symbols.

---

* Some examples would be: acid test, the crying need, all-out effort, no uncertain terms, last but not least, each and every.

** In a report on Executive Compensation I was cautioned not to use the word 'Manager' or 'Executive' since those words tend to irritate the prime reader.

10-5

THE HUMAN FACTOR IN REPORT WRITING

The human factor is an important one
in all activities.
It is more so in report writing
Let us briefly see how.

A report may be efficient but not effective.
It may be good technically
but unacceptable to the reader.
Except probably in pure technical reports,
this is often true.

The beginner would do well
to become aware of this difference
between technical efficiency
and human acceptability.

As report writers, we are dealing with people,
and people have susceptibilities.
If, for example,
we are knowledgeable in a particular area
and the reader is not ;
and we rub in this fact in our report,
the reader may not 'buy' our report
For not buying, we may call him names
and this can only make things worse!

The point is that we should give
conscious attention to
an acceptable form of presentation.

Here are a few thought-starters drawn from Indian cases:

1. If anyone has helped in any way in the course of a study—many do help, and some in a big way—it is the fair and graceful thing to **acknowledge** this help.

2. If anyone—however humble his position in the hierarchy—provided the seed of an idea we have developed further and fashioned into a proposal, it is fair **to share credit** with him.

3. When, for example, we study systematically the working of a company section, we are often able to think of a few improvements. Perhaps, the same improvements he may be able to think of if the section-in-charge takes time off and makes the study. We should avoid claiming any special credit for our 'discoveries'. In particular, we should avoid resorting to alarmist and emotionally-loaded expressions. (Examples would be: "We wonder how such an obvious waste was not noticed by the man in charge of the section who is described as a senior officer of the company". "The delay and the breakdowns are abysmal." "There are any number of accidents." **One concrete solution is to express oneself in concrete, factual and quantitative terms.**

4. At any rate, the reporting should be impersonal. We should make it obvious that we are only examining **what** is wrong and **not** —repeat 'not'—**who** is wrong, that our concern

is seeking remedies and not apportioning blame. Unpleasant things have to be said, yes, but these can be said pleasantly. (For example, we can say: A detailed discussion of the current outstandings—18% of which is due for over 3 months—has thrown up the possibility that in the next two months this will be 15% or less. The steps to be taken are: . . . . .)

5. Some of us are extremely clever; and the way we analyse and come up with ideas **only we can.** If we belong to this group, we better warn ourselves: "*Don't win an argument and lose a sale. Worse still, don't win an argument and lose a customer.*" We also better remind ourselves: "*Ideas are dime a dozen. It is only ideas in action that pay off.*" Ideas in action imply other people accepting them and implementing and keeping them implemented. We emphasize this point because we have repeatedly found among staff specialists —industrial engineers, O&M officers, systems engineers, and even among industrial consultants——a tendency to be 'aggressive' on paper, to tell the other fellow off, and generally to show off. These tendencies often create a boomerang effect

6. One may point to another chapter in this book and say: "But you said a report writer should not be overtly persuasive". Yes, one must not be overtly persuasive. Also, one must not be overtly dissuasive either! Both will defeat the purpose.

7. The attitude, the tone and even the words* have a say in making for the acceptability of the report. Let us give conscious attention to **this acceptability factor** in writing a report.

* For a suggestive list of words people generally like and dislike, please see the appendix.

DECISION-MAKING AND DECISION-MAKER

Since reports are often aimed at
assisting decisions,
we should have some idea of
the decision-making process
and the needs of the decision-maker.

DECISION-MAKING

Decision-making is a complex process.
When we look at the end results,
we get the following operational definition.

The decision-making process
is the process by which a manager

a) frames tentative hypothesis, bearing on the problem and its possible solution ,

b) tests a hypothesis in some acceptable manner, preferably by conducting objective research ;

c) establishes the alternatives or the possible solutions ;

d) selects that alternative which he concludes is the best in the circumstances ; and

e) communicates the selected alternative to secure its acceptance as a decision.

All these a manager does, though unconsciously,
and often not in a systematic fashion.

A manager generally assesses the alternatives
on the basis of his experience,

In written reportin gwe do not have
his attitudes and his feelings.

This suggests that a report writer
has to appeal to the readers' desire
for **objectivity and accuracy.**
If his writing is overtly apprehensive,
he may evoke a negative effect.
It is true that a decision-maker assesses
the alternatives on the basis of his experiences,
his attitudes, and his feelings.
For that very reason
the report writer has to help him
with adequate data
presented with objective accuracy.

DECISION-MAKER

Now a word on the decision-maker.

The decision-maker uses information
as a basis for decisions.
He utilises information inputs
and creates decision outputs.

The information he receives
may be observational or inferential.

Living as he does in a verbal world,
the decision-maker makes inferences
by the information given to him by hs juniors.
For all that he knows,
the information given by the juniors
may itself be inferential.

This aspect of the decision-maker
highlights the necessity
for the selection of reliable,
objective tools of data gathering,
analysis and interpretation.

We will be improving
the decision making progress
if we make it a rule
that a well-researched report should form
the background of every key decision.

It is true that a good report is not
everything in decision-making.
Qualities of the decision-maker——
like basic intelligence, perceptive ability
and learning ability——
certainly play an important part
in the effectiveness of a decision.
All that we wish to emphasize here is
the place of decision inputs
by way of objective analysed information inputs
through competent reports.

FIRST DRAFT

The aim here is two-fold.
One, is to make sure the report covers the subject, to locate gaps and overlaps or even contradictions ; and the other is to see that the language is clear **and** readable.

We give ourselves time between writing the zero draft and doing the revision, say two days. That way we are able to spot errors more easily and quickly. We recall that it is easier to correct the reports of others than our own.

We read the complete report at one stretch— to determine whether we have the subject intact, whether all the data are accurate, and whether the report has achieved its purpose.

We closely compare **the content** with the working outline to determine the completeness of the material. The questions that call for satisfactory answers at this stage are:

> Has the subject been covered adequately ?
> Is the report accurate and factual ?

Next to **content,** we examine **the organisation of** the report. The related questions would be:

> Has the material been well organised ?
> Are the data pertinent and necessary ?

The third aspect
is checking for **clarity of expression.**

Now is the time that each word,
sentence and paragraph
is given attention to
for correctness and meaning.

WHILE REVISING

We may look for a **structure**
that can be described as **circumlocution—**
to see whether we can rewrite
and communicate better.

We may look for **unduly long sentences—**
to see whether
a couple of short sentences would
express the idea more clearly.

We may look for long **complex words—**
to see whether simple, short words
could serve the purpose equally well.
We may also look for **needless words—**
to remove them.
We may particularly look for
emotionally-loaded words— to remind ourselves
that report writing is objective writing,
not propaganda.

By the same token,
we may look for **general and vague words—**
to remind ourselves
that report writing is action-oriented writing.

We may look for the **I's—**
too many I's tend to prejudice the reader
against our findings.

We can check for **readability.**
Is our writing inviting,
interesting, readable ?

To see how 'readable'
our particular piece of writing is
we can apply formulas
developed for the purpose
and see how our writing scores.
They are **not** *formulas* in the sense
that they should be used as much ;
They are **not** *formulas* in the sense
that they focus our attention on
the readability or otherwise of our writing.

10-8

SECOND DRAFT

From this revised and improved first draft,
we go to a neatly typed manuscript.
We evaluate, revise and rewrite further
for content, organisation and style.

Often, the practice is
to read aloud the second draft—
to locate errors of spelling,
composition, grammar and punctuation
as also to locate confusing structures,
awkward sentence constructions
and faulty pronouns.

At this stage, additionally,
we check the draft for the following:

REPETITIONS.

For purposes of emphasis or completion
we may have repeated some of our ideas.
We may also have repeated them
unguardedly or even to pad the report.
Every time we find a repetition
we may ask ourselves:
Are we deliberately doing so
for emphasis or clarity,
or for other reasons ?

OMISSIONS:

Because **we** know,
we tend to assume
that the reader too knows.

The result is we leave a few things unsaid.
The most common omissions are:
failure to identify people,
failure to define unfamiliar words,
and failure to describe materials
or processes involved.
If we place ourselves
in the position of the reader,
we will be able to detect the omissions
and give the supplementary information needed.

RELEVANCY:

If there are likely to be errors of omission,
there are also likely to be errors of commission.
If too little is confusing,
too much may be irritating.
The question is not:
Between the two, which?
The question is:
Is this material essential
in conveying the idea to the reader?

REQUIRED REDUNDANCY:

A certain amount of redundancy
seems in order on occasions;
for example, when the reader
is not likely to read every word.
when the reader is likely to read
with more than the normal haste.

LITTLE THINGS:

The absence of a consistent style
in matters like **capitalization**
gives discriminating readers
an impression of carelessness.

The present conventions give
the following guidelines:

Capitalize all words in proper names.
Capitalize descriptive terms used to identify geographic regions (e.g. the West, the Orient)

Capitalize official titles used in full form following a name (Mr A B Shroff, Managing Director, Calex Industries Ltd.)

Capitalize the full names of Government organisations (e.g. The Secretariat, the Indian Navy)

Capitalize each word in a trade name (e.g. Sanforized)

Capitalize the first word, and all important words in titles of publications (e.g. Graphs, How to Make and Use them).

If we have used words
not listed in the standard dictionaries,
we can make sure we have defined them
the first time we used them
or give them in the glossary

We may remember that some readers
may not be familiar
even with such common abbreviations as
i e. (that is), e.g. (for example),
cf. (consider), viz. (namely).

We may look for (in order to avoid)
the use of shortened forms of words
(e.g. lab. for laboratory, phone for telephone);

also can't (cannot) and don't (do not);
also Latin and other foreign words
while English words are available
to convey the same idea
(e.g. *ab initio* for 'from the beginning',
pari passu for 'simultaneously and equally'.)

FLOW OF IDEAS:

Is there a logical flow
of ideas from sentence to sentence,
paragraph to paragraph,
and section to section?
Is a rearrangement called for in some places?

Now that we have done our best
to revise the second draft too,
we may invite someone unfamiliar
with the subject to read the report.
He need not do the revising for us.
It is enough if he points out
where the message is not clear,
where the flow is not smooth, and the like.

He is likely to detect ambiguous sections
and poor arrangements much more readily.
In particular, he may locate
jargon which we tend not to recognize.

All of us tend to develop
a fondness for certain words
and these are repeated too often
(e.g. Furthermore, incidentally,
a must, integral, significant, dynamic).
Such repetitions jar on the reader.

In this revision,
we should get them weeded out.
This of course does not apply
to fundamental technical terms
(e.g. procedure, capability).

Our tendency is to justify to him
whatever we have done.
We should resist this temptation,
promptly sit down,
reconsider and revise, if necessary,
those parts of the reports
to which he has drawn our attention.
Before the final copy is typed,
we will read it aloud once more.
Even this we will do
after a break of a day or two.
The idea is to have as fresh a look
as we can develop, at the report.

Obviously, these steps we will take
while cultivating the skill of report writing.

Later too we will take all these precautions
where the nature of the report warrants.

10-9

FINAL COPY

Now that the matter to be presented to the reader
has been made final
as also the manner in which it will be presented,
we have to think of a few 'mechanics'
that make for the acceptability of the report.

We should make it effortless
and easy to read the report.
The form must serve to make content clear.

We should make the report as inviting as we can.

The format should enable the reader
to locate the key words,
identify the main ideas,
perceive the broad outline,
and isolate the summaries.

We never write a meaning as such.
We write only symbols (words)
that stand for the meaning we wish to convey.
The reader does not see the meaning ;
he sees only the symbols and interprets them.

**All elements of format should be organised
to underscore the intended meaning.**

No writer can give the reader
precisely his intended meaning.
The writer simply sets before the reader
well-chosen word symbols,
arranged carefully in good order.

Every reader needs to build for himself
an understanding of the writer's meaning.
The writer most diligently strives
to expedite the process.

THE PACKAGING

We can use good paper
(bond $8\frac{1}{2} \times 11$ size, for example.)
We can get it typed neatly—
We can go in for a sharp type
and generous margins—
one inch margin on either side
and maybe a little more on the left margin—
and double spacing.

(For footnotes, extensive quotations
and tabulated mater, we can use single space).

Skillful paragraphing,
suitable headings and sub-headings
also facilitate reading.

We can use an appealing wrapper-cover.
If possible, the binding should permit
the report to be laid out flat on the table.

It is common practice to insert
a blank unnumbered sheet
between the cover and the little page
(which is also not numbered)
and between the last page of the report
and the back cover.

This packaging effort tends to get ignored,
perhaps because it is a minor detail.

Little things,
effective report writers have found,
are little only so long as they are not ignored.

On the minor side also come
items like consecutive numbering of the pages,
proof-reading the final copy,
and number of copies.

Maybe, for typographical errors
or reasons of rearrangement of sequence,
we may have to retype a page or two.
The effort is worth it.
'Letting it go' may spoil the effect
disproportionate to the effort called for.
Let us remember, reports have
a longer life and a wider audience
than our letters and memos.

Let us also remember
that the final copy is our report
so far as others are concerned.
Let us therefore give due care to
the detailed editing and checking on this copy.

This bears repetition.

Let us edit the final copy for

1. Correct spelling

2. Grammatical accuracy

3. Consistency in 'style'—use of tense, person, voice, capital letters and small letters (e.g. Airplane is always 'she' or 'it' in the report. Management is always with capital M or small m).

4. Consistency in 'matter'—conventions in numbering, terminology, etc. (e.g. Inventory always means money value, usage always physical units).

5. Completeness in 'reference'—Reference to a source should consist of identification of the author, the work referred to, facts of publication, and specific reference to the page within the source.

COMMON QUALITIES OF A GOOD REPORT

Let us recall once again
the common qualities of a good report.

The qualities that make a report effective are—
organisation,
language
to meet the needs and abilities of the reader,
thoroughness,
sound reasoning,
clearness and
conciseness.

These are minor ones—
minor, once they are taken care of.

NEATNESS

Neatness impresses. That the contents are of a high standard
is not enough.
The report should make a favourable impression.
First impressions are hard to overcome.

READABILITY

Just because the reader "has to" read our report,
we cannot neglect the style of writing;
we cannot let it be dull.

With a little care,
we can make it fresh and attractive.

RELEVANCE

Since we collect a lot more material
than may prove really necessary,
the temptation is for us
to let most of it find a place in the report.
We hate to see any facts " go to waste."
This tendency lets in irrelevant matter,
making the report ineffective thereby.
What to keep and what to drop
is a matter of judgement and
this quality is an important one
for a report writer.

OBJECTIVITY

The readability of a report depends
on its objectivity.
If our report suggests bias,
the reader will lose confidence.
Consciously we should avoid a credibility gap.

At each stage of revision, let us recall
the essential aspect of communication.
What we have in mind
we first edit for ourselves.
Then we transfer this edited thought
to the reader in terms understandable to him.
It is this double transfer process
that is often taken for granted.
Let us warn ourselves on this point.

Once we have satisfied ourselves
that it represents our best efforts,
we can date, sign and turn it in
to the reader or readers.

11

GRAPHIC DEVICES AND PICTORIALS

To supplement and amplify what we have written, we may use graphic devices and pictorials.

Graphs, charts, tables, drawings, diagrams, maps and photographs help to vividly delienate facts and ideas, and add to the readability and acceptability of the report

Any technique that is effective in improving the understandability of our report should be used freely.

The one caution we get from authorities is that we should not overdo their use

CHARTS

A chart is a tool to present complex data in compact, interesting and visual form. Factual statistical information comprised of masses of data can be more readily comprehended and interpreted when so visualised.

Organisational charts : Words alone cannot always communicate the idea of the whole arrangement of an organisation. The organisation charts supplement the presentation. They are used to visualise each component of the structure in relation to the complete organisational complex.

Lines of authority
and chains of responsibility
can be clearly perceived
in their correct sequence and relationships.

Flow charts: These are used to visualise
the movement of persons or things.
They summarize the sequences of events,
sometimes dramatically.

Statistical map charts: They display
overall proportional numerical relationships
in terms of topographic distribution.
One example is distribution
of things or people over a particular region.

Pie charts: They are particularly handy
for showing how a value
is divided and pro-rated, for example,
to say how profits are distributed
and how costs are allocated.
Annual reports usually use this type of chart.

GRAPHS

Graphs are used to bring alive
abstract ideas embodied in statistical figures.
Graphs serve better to dramatically
compare and contrast sets of numbers
and to depict movements or trends in
a discernible direction amidst variables.

A well-designed graph can be used effectively
in support of or in place of verbal description.

Bar graphs: Bar graphs are
easy to construct and simple to understand.
They consist of bars
arranged horizontally or vertically
from a 'zero' base.
Different values are represented by size,
length, and sometimes colour of the bars.
Bar graphs are often used
for comparing and contrasting—
incomes and wages, quotas and sales,
individual output, departmental production, etc.

Bar pictorial graphs: Bar pictorial graphs
are less exact but more interesting
than horizontal or vertical bar graphs,
particularly for non-technical readers.
For projecting certain kinds of figures
these are most effective.
The drawing is usually the object
to which the numbers refer—
persons, houses, radios, etc.
Numbers or sizes of the illustrations
convey proportional amounts,
for example, one figure for 100 persons.

Circle pie graphs: To depict
a breakdown or distribution of particular values,
circle pie graphs are used.

Pie charts: These are
familiar devices used in financial reports.
They offer an easily understood breakdown
of 100 per cent of such items as money or time.
The numerical values (%, etc.)
are usually indicated.

Each slice of the pie can be coloured
to emphasize its percentage of the whole circle.

Line graphs : To present
continuous data over time, this is effective.
The most common in technical reports is
the line graph,
in which the inter-relationship
between two or more parameters
is symbolized by a series of points,
a curve, or both.

Map graphs : When our discussion is concerned
with the people of an area,
these come in handy to compare quantities
and to indicate locations.

SOME POINTS TO REMEMBER

Where graphs are used,
the choice of a suitable scale is important.
In general, the scale should be
a multiple of ten (10).

The range should not extend
beyond that needed to plot the data.
Open, unused space creates an unbalanced effect.
One of the secrets of using space effectively
is to select the most appropriate origin;
which will not necessarily be zero.
Where it is not zero,
the value at origin **must** be shown.

On graphs the usual convention is
to plot the dependent variable
on the ordinate (the vertical Y axis)
and the dependent variable
on the abscissa (the horizontal X axis).

The title appears below the illustration
or graph and not within the grid

All supporting information
must be set clearly apart.

If reproduction is required,
graph paper with fine lines is not suitable.
For such purposes, the drawings are made
two or three times their final size
and then reduced photographically
for cleaner result.

TABLES

A table is a typographical device
used to present in condensed form
many pieces of related information
for comparison, selection or study.

Tables play a major role in technical reports
and, therefore, should be accurate,
complete and expressive.

ILLUSTRATIONS

Illustrations play an essential part
in technical reports.
Many concepts cannot be passed on to a reader
without the help of illustrations
(e.g. the interconnections of parts
in an electronic device without a 'schematic')

We will do well to take the assistance
of and work closely with
our illustrators, and photographers.

The illustrations can take the form of:

1. Line drawings
2. Documentary photograph
3. Studio photograph
4 Wash drawing

DIAGRAMS

A concrete representation of a thing
by a diagram avoids
some of the problems of semantics and
clears the way for a direct meeting of the mind
of the diagrammer with the mind of the viewer.
While the written word
must be seen and understood
before the mind can summon up
a picture of the thing the word stands for,
the diagram once seen
makes easier the further processes
of recognition and comprehension.
Since many of the complex objects
which must be explained
in contemporary reports do not readily
(particularly when technical) lend themselves
to the higher process of word description,
diagrams are often
not merely desirable but necessary.

PHOTOGRAPHS

To show visually
the object described in the report,
the photographs are useful.
They have their limitations ;
for example, only the outer surfaces
of an object can be easily photographed.

Even so, their presence in reports,
particularly those of a scientific character,
adds greatly to their interest and clarity.

WHERE AND HOW TO USE GRAPHICS

Tables are useful to present
a mass of information in a compact form.

Graphs and charts are more useful
to indicate trends and fluctuations
and to permit easy comparisons.

The impact of trends and variations
is more with a graph than in a table.
However, if numerical values have to be picked up
for use in formulas, calculations, etc.,
tables can be more accurate.

If values have to be used, we may give a table
(Let us not ask for them to be read off a graph).

If we want to show trends, we may give a graph.
(Let us not ask them deduce from tables)

Which *pictorial device* to use
depends on the report's readership and purpose.
Thus, scientifically trained persons
prefer tables because
they are able to compare
sets of figures without difficulty
and absorb them
Semi-technical and non-technical staff
will normally prefer the graph or chart.

Charles E. Van Hagan* suggests
the following guidelines
as to what device can be used where:

To show dimensions:
A simple line drawing seems best
when you want to give the dimensions of a part,
a piece of equipment, plot of ground,
or similar items.

To create a mental image:
A photograph of an item seems best
when you need to be sure
that your reader has the same image in his mind
that you have in yours.

To record test results:
The most effective means of recording
actual test results
is with a documentary photograph.

To indicate materials.
When you need to indicate
a variety of materials from which
component pieces of one item are made,
use a line drawing with different styles of
crosshatches, stippling, etc.

To show steps in a process:
A series of photographs.
The photographs should be close-ups.
Be sure that the accompanying legends
clearly identify each step.

* Van Hagan, Charles E., *Report Writers' Handbook*
Prentice-Hall Inc., Englewood Cliffs 1961

To call out parts :
Line drawings.

To show a test set-up :
A photograph (documentary).

To give a visual impression of an event :
A wash drawing

Every figure in the report
should have a 'legend'—
to explain the figure
and a number—to help reference

The legend is written below the figures
and capitalized—
only articles, prepositions
and conjunctions of less than four letters
(e.g. if, the, and this) are not capitalized.

Figures are numbered consecutively
for the entire report, including appendices.
If the report is a very long one,
figures can be numbered
by chapters (e.g., Fig 1—5, 2—7, etc.)

12

PRESENTING THE ORAL REPORT

The Marketing Director of a company
once told me of a significant incident.
His Market Research Officer
made a good study and
prepared a valuable report.
"This came up for discussion
at a Regional Sales Managers' meeting.
The Sales Managers
did not agree with the conclusions
and they were pretty vocal.
The young man (Market Research Officer)
had all the facts on his side
but he looked on pathetically—
he could not report orally.
I came to his rescue and saved the situation."

Such incidents are not uncommon.
We may be called upon to present our work orally—
to the boss, to a committee,
to the entire sales force,
to a professional society meeting.
In such reporting, we have a double objective.
One is to establish our personal reputation
for clear thinking, sound judgement
and convincing speech.
The other is to help the audience
arrive at a proper decision
on the basis of a systematic study
and objective report.

IT IS IMPORTANT TO US AS INDIVIDUALS

The listeners are hearing us
but they are appraising us too.
In a sense we are on trial.
There can be no confusing issues,
no fast talking, no smart tricks,
no high-pressure selling.

The audience expect that we, the oral reporters,
display honesty, logical thinking,
an awareness of economic factors,
presentation of all the significant information,
sound judgement,
understanding of long-range planning,
and an underlying appreciation of
hard-headed business procedure

On most occasions
we are likely to be faced by
passive rather than active listeners.
Secondly we may be given
a mere 10 or 20 **impatient** minutes

What will we select to present?
How can we communicate
only the most relevant ideas?
How much can we realistically hope to make
our largely passive audience understand?
What are the ways in which we can hope to
attract and hold audience attention
long enough to get across even a few main ideas?

Generally speaking, **visual aids**
help engage the attention of passive audiences.
From the report we can extract
the most pertinent data
with a view to presenting these visually
in the form of charts or slides.

We can also build the presentation
around an actual object—
a miniature version of the new pump.
a scale model of the proposed building.
Whatever ingenious uses
of form, colour, and motion we can make
to engage and maintain the attention of
our audience are satisfactory,
provided the visual device does not
draw too much attention to itself.
We are not operating a sideshow.
Time, effort and money expended
in their preparation are usually well spent.

The 'striptease' poster is another tool.
Each major point on the poster is covered
with a protective piece of paper or cardboard.
As we make a point,
the covering is quickly stripped away
to expose the key word or phrase.
This technique permits the audience
to gain cumulative knowledge
while the words and ideas are
constantly before them
We have all the key words on the poster exposed
and available for use in summary.

These aids mean time, effort
and occasionally cash ,
and they are usually worth them

We should organise and rehearse our talk,
which has to be extemporaneous to be effective
In particular, we should time ourselves
to see we are well within our limits.

Except perhaps
a specific opening and closing line,
we would do well to avoid memorising the speech.
We had better adopt a conversational attitude
and slant our presentation to the audience needs.

Only the choice of words
should be left until talk-time ,
everything else should be
meticulously predetermined.

We who present the information
should be in full control, setting the course,
deciding the subjects to be discussed,
choosing where the emphasis should be placed,
and setting up the schedule to be followed
Success or failure here
is usually our responsibility

THE MORE DIFFICULT GROUP

It is perhaps easier to present
oral reports to associates,
including immediate superiors.

When we present a report
to groups of equivalent authority,
it becomes a more delicate matter.
We all know how conscious
people are of their rights
and how ego-centred they are.
When they give in to our point,
they feel they give in to our authority,
which is of course not the case.

A meeting of this type
can develop into a war of words,
with opposing factions equally matched.
Accordingly, the preparation of oral reports
for such a meeting may often require
a considerable amount of
careful planning of the widest scope.

Perhaps the most important aspect of
the presentation will be the introduction,
the setting of the stage.
The ‘opposite’ group
may go into the meeting relatively unprepared,
but with an initially hostile viewpoint,
ready to discredit our side
on the slightest pretext.
For this reason,
the first man to speak
will either assure success or wreck the programme.
Obviously, a meeting so potentially ripe
for widely divergent results
requires some sound preliminary steering.

This can be accomplished in advance
by a thorough job of thinking through the problem,
by the marshalling of all the relevant facts.
and by a judicious presentation
of selected material.

THE CUSTOMER GROUP

Some of our meetings will be of
the customer conference type.
The audience will be a potential client
The listener draws a conclusion
from the presentation of facts and,
often, ultimately makes a decision
or carries out some action.
Although no decision may be reached
at the meeting, and although
the listeners may not even indicate
their ultimate course of action,
the oral reports presented at such a meeting
may be influential in the forming of decisions
that the course of events
for months or years to come
may hinge upon the soundness
and the quality of its presentation.
Clearly, the success of the oral report
in this area largely rests on the effort expended
in its formulation and presentation.

THE MANAGEMENT GROUP

The third and perhaps the most important use
of the oral report is
the presentation to Management
of a new programme or of a request
for the budgeting of funds.

A certain amount of prior intuition or judgement
about the management's likely viewpoints
may be of inestimable value
during the preparation of the programme.
Anticipation of hostility to the programme,
wholly or only partially,
will aid in the assembly of the proper material
for the presentation.
The ultimate approval or disapproval
of the programme
may determine the future course of action
for long periods ahead.
For this reason,
the actual initiation of a new programme
or the continuation of an existing one
can be fostered or killed
by the quality and completeness
of the oral presentation.

Good preparations obviously
will yield good results.
Planning here is a continuing activity,
as information is collected,
viewpoints developed and modifications presented.
Even so, the final programming
may still require a major effort.

The presentation itself
we should carefully stage
and execute with the maximum proficiency.

13

FOLLOWING UP THE REPORT

The ultimate aim of a report is action.
Decision is only an intermediary stage,
important as it is.

Effective reporting
facilitates good decisions.
In addition, effective reporting
facilitates implementation.

Either in the report itself
or through a separate note, we would do well
to detail the responsibilities
and the communication systems necessary
for implementing the decision
stemming out of the report
We can present and justify budgets
and time schedules
for implementing the reports.
We can make recommendations about
the need and responsibility for follow up.

One way to follow up in some organisations
is to have progress reports or
follow-up reports by the report writer himself.
He may be called upon to note exceptions
and recommend corrective action.

14

MEMORANDUM REPORTS

One of the commonest methods
of exchanging information and ideas
within the organisation
is the memorandum report.
It is hardly a page or two
and does away with many of the frills.
To emphasize the matter-of-factness
of this type of report,
the word 'memo' is used.

Memos are reports to keep personnel informed
on matters of current or temporary interest
For example,

1. **To transit information** horizontally in the company structure. One department head, for example, may send a memorandum to his counterpart in another department.

2. **To convey information** vertically in the organisational structure. A person's memo to his superior or his subordinate illustrates vertical communication.

3. **To serve as a record.** The result of meetings, trips, and discussions may be summarized in a memo which can be circulated to others.

4. **To act as a reminder.** Notification of meetings may be made by sending memos to the individuals who are to attend.

The principles of report writing
apply to memos—
in content if not in form.

As in composing a formal report,
we plan a memo, mentally.
We define our purpose
and visualise the reader(s).

We gather the information and determine
how we should organise the material.

In organising the memo report, we would
decide on the central idea,
select the facts which will help us
carry out his central idea,
reject any material which is
not necessary for the reader's
understanding of the problem.

Often the memo writer misses
to ask himself two questions.

What does the reader want to learn
about a meeting or visit ?
How can it best be told concisely ?

The reader, however,
is interested only in information
that would be helpful to the organisation
and he wants only the essential points
to be stressed.

The reader likes a report
which is written in this strain:

> This report summarizes the conference
> on "Incentives for office staff" which
> I think are especially applicable to
> our problems. Of all the discussions
> on the attached programme, the following
> three seem valuable since they
> concern problems which we have been
> trying to overcome in our office:
>
> 1.
> 2.
> 3 etc

Memos to be memos should be brief.
When the boss says:
I want a report in just one foolscap page,
what he means is·
Give me a memo.
A memo is hardly two pages long;
it is often just one page.
Writing pointed, crisp, relevant memo reports
is an important skill for personnel
at various levels—
from field salesman to general manager.
Here are some samples of such a memo report
taken from real life situation.*

** For obvious reasons, the names and the details are kept fictitious*

MANAGER DEVELOPMENT CONFERENCE

NOTES OF GROUP MEETING
HELD ON 12TH APRIL 1960

1 The topic of presentation today was *Management by Implications.*

2 An important job of every executive is to make a decision. This decision should help us to get results or achieve the objectives.

3 When a decision is made, we will have to remember we are not deciding as individuals but as representatives of the organisation In fact, we stand for many things including the part of the world (Asia) in which we happen to live When we take decisions therefore we will have to know and consider the *implications* The implications of our action can be many and serious and often irrevocable Hence the need for MANAGEMENT BY IMPLICATIONS

4 Every time we take a decision we can ask ourselves the following questions:

Who are all the people affected? and
How are they affected?
What are affection? and
How are they affected.

5 Results need not necessarily be tangible They can be intangible It is well known, good healthy relations make for good results.

6 If we do not manage by implications we are likely to set up "relational cancer"

7 The implications of the punitive approach were considered The approach of "don't fix blame, find a remedy" was commended

8. Even in small matters like giving an appointment, it is possible to manage by implications It only says.

'think *before* you do'. It says 'exercise the human privilege of extended *reaction time*'.

9. If management by objectives is significant in terms of today, management by implications is significant in terms of tomorrow.

10. In human relations situation, you cannot afford to make mistakes even once

11. Experience is necessary to avoid blunders in a situation.

12 The technique of role playing provides a solution by offering semi-experience

13. The mechanics of role playing were demonstrated by a practice session.

14 Significant items that arose out of the days discussion were:

   (a) A manager's first and fundamental job is to facilitate the work of the men below

   (b) Managers should make it a point to make known what stands in their way of giving the contribution to the organisation

   (c) Consultants are useful because of their objectivity, their overall approach and their specialist information *But* the company executives can be equally helpful since they know the organisation and the day-to-day problems they are facing. It is good practice therefore to consult *our* men before we consult others.

   (d) In a matter like the mechanics-working-outside-factory-hours, discipline approach alone is inadequate We have to take an analytical approach, take remedial steps and introduce preventive management.

Bombay
March 1, 1970

M D

PROS AND CONS OF SHIFTING TO NEW PREMISES

PROBLEM:

The present premises are already getting cramped A new office accommodation has been offered, which can be occupied at will. It is about two and half times the existing area, is well furnished, has other facilities like a Conference Room, and is in good locality. The rent burden would, however, be substantially higher by about Rs 1.0 to 1.25 lakhs per year.

Should we accept the above offer?

POINTS IN FAVOUR OF MAKING A CHANGE

1. As mentioned earlier, the existing area is getting cramped. Though only about six months old, we already appear to be reasonably well established, and the trend indicates that further immediate expansion is almost inevitable In the existing premises, there is very little scope for accommodating more people

2 The premises being offered are quite large and at least for the next 2/3 years they should prove quite adequate.

3. Certain facilities which already exist there, for example cabins, a conference room accommodating 25 persons, etc, make the proposal more attractive

4. The locality is quite impressive, and from the public relations angle, it will be an additional asset

5 The conference room can be put to other uses, reducing the burden of rent

6. Even if the present calculations about our own rate of growth prove overoptimistic, it would not be difficult to rent out part of the premises later.

POINTS AGAINST MAKING A CHANGE

1. We must analyse more carefully whether in fact the existing premises are so cramped as not to permit any expansion. Many times scientific layouts do increase space utilisation considerably.

2. It may also require more careful examination as to whether the rate of expansion envisaged by us is too steep It can turn out that it is feasible to achieve the same but in the process the quality of work may suffer If this happens, it may well turn out to be a disadvantage.

3. The conference room can certainly be put to other uses But would these uses be necessarily in our line ? If they are not, would it not mean extension of activities in undesirable directions ?

4. The present premises are more convenient for train commuters From the Nariman point, the nearest railway station may be a couple of kilometres away

COMMENTS ON THE ABOVE PROS AND CONS:

1. If we do expand as envisaged, it certainly would mean rather a steep rate of expansion. But the very fact that we are aware of the same can help us in taking steps to ensure that the quality of our performance does not suffer in the bargain It would be necessary that we do not remain rigid in our outlook, either about the organisation structure or its spread in different layers and that whatever changes appear necessary on pragmatic considerations, are carried out in time

2 Whether the present area is getting too cramped or not may not need a very elaborate analysis Even if industrial engineering studies are to reveal that we can

accommodate even 20 per cent more people, the growth in our activities will certainly make the present accommodation too small in a very short period hereafter Proposals for good premises do not come at our wanting and if we do have a prima facie good proposition, we should opt for it, even at some risk

3. If we can utilise the conference room for organising courses on specific topics, the burden of extra rent will come down quite significantly A 4-day course costing Rs 400/- per participant can easily be organised once in every 2 months and this would give a total return of Rs 60,000/- over the year Though part of this would be spent in meeting necessary expenditure, the net return can still be quite large

4 Expansion into training activity is perhaps something different from what we might have envisaged earlier But for that matter, we need not restrict our vision at the moment as to what is in our line and what is not Certainly, we should not be merely money-minded and run after every opportunity to earn, irrespective of any other consideration. But suitably organised training programmes on selected topics can definitely be in our line Following are some examples of such topics

(a) Short-term demand forecasting ,

(b) Financial Controls ,

(c) Ratio analysis as a tool of management control ,

(d) Inter-firm comparison ;

(e) Management of liquid resources ,

(f) How to initiate R & D activities ,

(g) Project planning and administration ,

(h) Long-range planning for a Corporation

(i) Introduction to industrial licensing as practised in our country ,

(j) Monopolies and Restrictive Trade Practices Act—its application and how it may affect individual firms.

5. If worse comes to worst. and we realize later that the space is too big for us, it should not be very difficult to rent out part of the area

CONCLUSION:

I feel that we should go in for the new premises

Sd/- E F. Ghia
Administrative Manager.

October 15, 1968

G M.

WORK RATIONALISATION IN DEPARTMENT

1. You wanted some idea about the work being done by the different persons in my Department with a view to finding out whether the same could be rationalised and attended to with reduced strength than at present This note is in respect of the above

2 One of the major objectives of this Department is to build up a sort of information bank, so that we possess adequate data on the various economic developments in the country which may affect us in future

3 In an area of this type, there is no one source from which we can get the necessary information. Hence, as a normal routine, we go through such dailies as Economic Times, Financial Express, Times of India, The Hindu, Indian Express, Statesman and Hindustan Times and periodicals like Eastern Economist, Economic and Political Weekly, Yojana, Commerce, Southern Economist, etc In order that the necessary information is readily available when needed, whenever we come across a useful news item, it is marked for cutting and filing. An elaborate filing system has been developed for filing the clippings Similarly, we advise purchase of different books which serve as reference material, go through them and index necessary details. The experience of the last four years has been that the only method of acquiring knowledge is to continue following the above procedure There are so-called digests and condensed hand-outs, but their practical utility is strictly limited because we try to keep information essentially from *our point of view* which objective cannot be achieved by them.

4 In our existing set-up, Mr. F G Hinghar takes care of the reading part, deciding as to which particular portions

are likely to be of interest to us, getting them cut and filed, and ensuring that the filing is in order Besides this, he prepares notes on different topics as and when required, presenting the information which is available to us in a cogent form. Mr. G. H Israily looks after the actual clipping and filing work. Mr. H I. Jeeva types out the various notes which are required from time to time. He also assists Mr. Iraily whenever necessary and possible.

5. The total number of clippings taken from dailies amounts to more than 60 per day, on an average. Apart from clippings, relevant portions fiom important journals which cannot be cut are got typed and preserved. The number of regular files maintained is over 200. Apart from regular files, special files of topical interest are also maintained. Periodically, the files are reviewed and the clippings which become out-dated are scrapped This becomes necessary because the files would otherwise become too bulky and unwieldy The total amount of work involved in taking out clippings, pasting them and then filing them in respective files is so much that Mr. Israel is not capable of doing justice to the work alone and has to be assisted by Mr. Jeeva The periodical review of the files is done by Mr Hinghar On an average, a file is reviewed twice a year, which means that 3 files are reviewed in every two days Such a review takes over 2 hours per file

6. According to my information, in almost all the organisations which are having such planning activities, they have to proceed on lines similar to ours I have had occasion in the past of taking work from groups of different sizes and I can make a confident statement that the strength in the Planning Department as above, is considered by me to be about the minimum one can have, if the present activities are to be conducted with any semblance of effectiveness Any effort of rducing the strength would seriously jeopardise the utility of the Department.

7 Another characteristic of this work is that the normal industrial engineering techniques cannot be used to assess

the workload. We can, however, carry out activity studies and I am sure that on any random checks, all the staff members of the Department would be found busy in useful work.

8. I would also stress that the advantages of such activities are derived over a long range of time There are some investments which we do for the future and I consider this activity to be of the above type

(Sd/-) I J Khaitan

15

PROGRESS REPORTS

The commonest type of report in an organisation comes under this category.

The average progress report
is expected to provide status-information.
Whenever the report is
for internal consumption,
the preference on the part of the modern manager
is for this report to include
an analysis of the situation and suggestions
to maintain, remedy or improve it.

The progress report has the following sections, though not all of them may be so mentioned.

1. **General background:** To tell the reader **what** the report is about.

2. **Objectives:** To spell out one or more **WHYs** of the report.

3. **Facts:** To describe the present situation
or to present the facts
which are being reported.
This section may be in
a structured or a non-structured form.

4. **Comments:** To give the reader
the benefit of one's analysis.
These comments may be inferences,
assurances, suggestions or requests.

5. **Proposals:** The report writer may say:
   To control or improve the situation,
   this is what I have done and
   this is what I propose to do and
   these are the things
   I would like you to do or
   these are the sanctions/decisions I want.

   Where sanctions are required,
   the report writer states them
   in clear terms, spells out
   the advantages that will accrue,
   and suggests measures for
   ensuring that the advantages do accrue

If the report is long,
the reader prefers a one-page summary
telling him simply 'what it's all about'.

The summary says:

1. What the report gives in detail
2. Certain recommendations
3. Decisions required.

PILOT PROJECT ON MTM APPLICATION & TRAINING

BY

N H ATTHREYA

T S VENKOBA RAO

MMC SCHOOL OF MANAGEMENT

BOMBAY

"A PILOT PROJECT ON MTM APPLICATION AND TRAINING"

This report presents a few case histories of the project and discusses

How the need for MTM was felt—what questions arose while examining possibilities of methods improvement

How MTM answered these questions

What is MTM—How is its use justified—What can MTM do

Where is MTM particularly applicable and where not

A brief outline of the training course imparted

HOW THE NEED FOR MTM WAS FELT ?

Three questions arose during Methods Improvement work in different establishments

1 The layout of the workplace can probably be improved to ensure a smoother flow of material One of the promising improvements appears to be relocating existing conveyor system Will the improvement justify the cost of changing the conveyor lines ?

   The cost involved can be fairly well estimated But how to estimate the benefits ? No trial alteration can be done conveniently

2 A jig is in use for drilling a hole in a part The machine running time is low Can we design a new jig with lesser handling time thus increasing the machine utilisation ? Can the saving justify the scrapping of the present jig and fabricating a new one ?

   How to know correctly the handling time for the new jig *before* fabricating it ?

3. The operators are trained and have good skill in a packaging job on a conveyor line. By rearranging the operations, a more uniform work load on the girls can be obtained and also a higher output.

   A separate pilot run on a smaller scale to evaluate likely benefits is not feasible and also the run will have to be quite long as the girls have to get used to the new method.

   How to estimate the output by the new method i e. the output that will be after the operators are re-trained and after they have gained sufficient skill in the new method?

   And without a correct judgment on this point how to decide whether cost, effort and time needed in re-training the operators and allowing sufficient time for them to get used to the new method is justified.

HOW MTM ANSWERED THESE QUESTIONS?

MTM was employed to analyse the method and time values in the present methods.

A new layout was laid, a new jig was sketched and a new method of operations was written out ON PAPER. Knowing the workers and the work situations in the plants, the method and time value that *will* be involved in the new proposals was worked out ON PAPER

The values obtained could be confidently relied upon to be met by an average worker when he has picked up sufficient skill in his work.

Incidentally in all the three cases, the proposals were found to be attractive.

WHAT IS MTM?

MTM is a system of predetermined time values which analyses any manual operation into the basic motions required to perform the operation and assigns a time value to each action which is determined by the nature of the motion and the conditions under which it is performed.

HOW IS ITS USE JUSTIFIED ?

Because almost any manual operation involved in Industry is a sequence of these basic motions identified in MTM and this analysis can be quickly carried out The time values assigned to these basic motions have been validated over a sufficient length of time and in various countries as *reliable* and that it will be met by an average worker working with sufficient skill.

WHAT CAN MTM DO ?

1. DEVELOP EFFECTIVE METHODS in advance of production by comparing different methods and indicating the correctives and simplifications necessary This reduces the number and frequency of changes and gives the employees a feeling of greater security.

2 IMPROVE EXISTING METHODS by analysing the existing methods motion by motion and evaluating the benefits of suggested changes including the justication for the cost of change over

3. DEVELOP EFFECTIVE TOOL DESIGN by giving correct estimates of the handling time and their effect on machine running time

4 TRAIN YOU to become more Methods Conscious by training to observe, record and assign time values to each individual motions and thereby clearly reveal how each motion adds to the total time and cost of doing a job

5. ESTABLISH TIME STANDARDS with consistency among all standards as each basic motion is given the same time value regardless of an operation being performed. It also provides a detailed record of the method used at the time the standard is established that any method improvement later can be readily evaluated

6 TRAIN THE OPERATORS to use the best motion pattern as the motion pattern can be accurately described motion by motion.

7 EVALUATE LABOUR COSTS with no need to 'guesstimate' as the only real estimating comes in the determination of motions which will be used on the work With familiarity of the workers and the work and sufficient skill in MTM there will be only a small difference between the estimated time and the time by direct observation later when the job is actually done in the shop

8 CHOOSE BEST DESIGN for the product or an equipment from the alternatives which are equally satisfactory from the functioning standpoint, because the labour cost involved in the different designs can be determined in advance

WHERE IS MTM PARTICULARLY APPLICABLE ?

In any repetitive manufacturing operations like press work, welding, packaging, etc., and in machine work where the manual operations of the operator has a sufficient influence over the machine output or the machine running time

MTM is *not* applicable for purely machine-controlled elements, mental operations like planning and physically restricted motions

THE ORGANISATION TRAINING

All the applications were developed as project work by the first batch of participants who underwent the training course for MTM application

The training course was made up of

a. 3-week group training on the principles of MTM
b One-day experimental session at a plant
c 1-week on-the-job guidance for each participant

The trainer was Mr R. Venkat who took his theoretical and practical training in Minneapolis, U S A

The group strength was 5—the maximum permitted was 10

CONCLUSIONS·

We think MTM will be *particularly* useful at the stage of developing work methods, yes, in the hands of development engineers and industrial engineers

Distribution B. C. De
C. D. Eapan

1ST PROGRESS REPORT ON THE INVESTIGATIONS MADE ON THE DISTORTION PROBLEM ENCOUNTERED IN THE MACHINING OF PRODUCT CODE NO. 100.

BY

A. B. CUNDER

METAL CONVERTORS PRIVATE LIMITED
BOMBAY.

15th October, 1958.

Note The name of the organisation and individuals are not real They have been concealed at the request of the organisation.

1. INTRODUCTION

1 1 Series of expe... have been carried out to ascertain whether the finish mach... bore of the Product Code No. 100 (hereafter called C-100) ... be distorted if the other machining operations at the sp... and horn cheeks are carried out later

1 2 Production Engineering Consultants have suggested to us a sequence of operations which will include machining operations on the horn cheeks and spring seat after the bore has been finish machined However, fears have been expressed by shop people based on their early experience that this would not be feasible due to the reasons of distortions as mentioned in 1 1 above

1 3 The fact that distortions do result in the main bore if the machining operations are carried out on the remaining parts of casting was subsequently confirmed by Production Engineering Consultants on the basis of the results made available to them by the shop on a couple of samples They expressed that this distortion was attributable to inadequate annealing or stress relieving carried out on the samples and hence if the latter are properly annealed, the problem of distortion could be overcome.

1 4 However, our personnel felt that other reasons viz (i) distortion of the main bore due to the stress encountered in the machining operations of horn cheeks and spring seats (this being high at the casting's cross section which would be comparatively less), and (ii) the distortion of the main bore due to the heat generated during the subsequent machining operations should not be ruled out

1 5. The purpose of the experiments was, hence, decided to be primarily to ascertain the effect of "quality of annealing" on the extent and other details of distortion and also to observe the extent of forces and/or heat generation vis-a-vis their effects on the finished dimension of the main bore

2. TECHNIQUE OF EXPERIMENTS

2.(A) *Annealing*

2.(A-i) .. 40 units were annealed in a separate lot maintaining proper quality check over the annealing cycle These units were annealed in annealing furnace after shotblasting (the practice of shotblasting before annealing is not normally followed in the production runs) with particular attention being paid to the cycle time and temperature control. The metallurgical results and the other details of the annealing cycle have been tabulated in the annexure 'A' of this report

2.(A-ii) Also few other units were selected at random out of the normal production where no specific emphasis was laid on the quality of the annealing operations and the results on these units were studied to compare them with those on the boxes of the special lot

2.(B) *Sequence of operations*

2.(B-i) The following sequence of operations was observed in about 10 samples selected at random from the separate annealed lot of units.

a) Mark centreline of spring seat;
b) Rough bore and face two surfaces;
c) Machine thrower end;
d) Finish machine the main bore on vertical turret lathe;
e) Face spring seat;
f) Bore spring seat; and
g) Rough machine hornway on slotting machine

2 (B-ii) The details of the tooling with respect to the type of tools, machines, coolants, speeds, feeds, depths of cuts and operators were maintained the same as in existing production practice

2 (C) *Method of measurement of critical dimensions*

2 (C-i) The diameter of the bore was checked at six different positions (two positions perpendicular to each other, at three planes) after each of the following operations:

a) finish boring on the vertical turret lathe.
b) facing of spring seat;
c) boring of spring seat, and
d) rough machining of hornways

2 (C-ii) The following illustration indicates the six different positions mentioned above where the readings for the diameter of the bore were taken (Dial indicator was used for the purpose)

2 (D) *Results of experimentations*

The following is the tabulation of results of various readings

RESULTS OF EXPERIMENTATIONS

Operation No.	Explanation
1	Before machining of spring seat
2	After facing S S
3	After boring S S
4	After machining on slotting machine
5	After 15 days

Operation No.	Places of Readings						Remarks
	A	B	C	D	E	F	
1	0.55	0 55	0.53	0 55	0 54	0 53	Sl No
2	0 55	0 555	0.545	0 55	0 55	0.53	797
3	0 56	0 555	0 54	0 56	0 56	0 54	Heat No.
4	0 56	0.56	0 58	0 54	0 54	0 515	14901
5	0 55	0 56	0 58	0,53	0 55	0 51	
1	+0 99	0.97	0 97	0 98	0 96	0 95	Sl No
	=0 96	0.96	0 98	0 97	0 95	0 94	974
2	0 975	0 95	0 95	0.99	0 98	0 95	Heat No.
3	0 975	0 95	0 95	0 99	0 98	0 95	15204
4	1.00	0.99	<u>1 02</u>	0 99	0.99	0.95	
5	1 00	0 99	<u>1 02</u>	0 98	0 97	0 94	

\+ Same day of operation
= Next day of operation
Underlined readings indicate distortion.

3. OBSERVATIONS AND CONCLUSIONS

3 1. It seems worthwhile to explore the possibility of eliminating problem of distortion by improving upon the methods of operations pertaining to proof machining at horn cheeks. No distortion occurred on any of the boxes during machining operations of the spring seat

3 2 Out of 13 samples machined by following the modified sequences of operations after slotting operation, 9 samples showed a definite indication of distortion at the position 'C'. During the slotting operation tremendous amount of heat is being generated (the cutting tool is H S.S and no coolant is used)

3.3 In the case of units which were selected at random from normal production runs in 4 out of six, no distortion occurred. For the remaining two, distortion occurred at the same position as in the above cases and almost to the same extent.

3 4. The results of samples selected at random from normal production run did not vary from that of the units of specially annealed lot thus confirming the fact that annealing does not seem to be the cause of this distortion

3 5 The reason for distortion (which occurs only after slotting operation of horn cheeks) can be attributed to the heat generation and/or forces encountered during this operation. The number of cuts for this operation varies from each box to another depending upon the discretion of the operator. When the number of cuts are less, assuming the identical machining allowance, the depth of cut would be more, resulting into a more severe machining operation, thus producing greater forces and higher temperatures This would tend to explain the fact that distortion occurs only on some of the units

4. SUGGESTED FUTURE LINE OF ACTION

4.1 To install coolant facilities on the slotting machine, (the pump has been indented for) and carry out the same

experiments with a view to ascertain if this will eliminate the problem

4 2. To investigate whether distortion exists in the case of planning machine being used replacing slotting machine as is envisaged

ANNEXURE "A"

ANNEALING OF C — 100

Burners lighted at — 15 00 hours on 3 9 1959
Load taken out at — 15 00 hours on 4 9.1959

Sl No.	Hardness BHN	Sl. No.	Hardness BHN	Sl. No.	Hardness BHN
X977	121	X976	119	X978	121
X916	120	X957	121	X959	130
X961	130	X991	126	X981	131
X964	120	X890	124	X951	128
X956	121	X952	120	X922	123
X921	123	X980	121	X906	126
X950	118	X927	120	X967	131

MICROSTRUCTURE

Heat No 578B

Magnification 68X

The distortion of pearlite and fermite appears to be uniform. A good number of inclusions are found distributed throughout the structure.

Magnification 94X

It appears that the free ferrite has not gone fully in solution and is seen as irregular masses The structure is more or less uniformly distributed of pearlite and ferrite

Magnification 694X

The presence of free ferrite is clearly seen A large number of inclusions are seen uniformly distributed

Heat No. 785C

Magnification 68X

The distribution of pearlite and ferrite is fairly uniform. A large number of inclusions are seen.

Magnification 94X

Free ferrite is found but not as much as in the specimen for Heat No. 578B. The distribution of pearlite and ferrite is maximum or less uniform and the presence of inclusions is conspicuous.

Magnification 694X

The structure is uniform with pearlite and ferrite.

DETERMINATION OF THE OPTIMUM NUMBER OF NON-AUTOMATIC LOOMS TO BE ALLOCATED PER WEAVER.

This problem has been viewed as a problem in 'queueing theory' and the cost as reflected in loss of production due to the waiting time of the machines has been estimated when the operator is asked to look after 2, 4 and 6 looms.

The stoppages on looms on account of waiting time were worked out by simulation The assumed set of instructions to the operator was intended to cut down the waiting time to a minimum and instruction was to start repairing any machine that has stopped as soon as noticed or as soon as completing the repair on hand.

The figures for loss of production time (due to waiting) worked out to be:

1.1% of total working time per loom in the case of 2 looms

6 0% of total working time per loom in the case of 4 looms

6 4% of total working time per loom in the case of 6 looms.

By comparative costs, the figure for 6 looms is quite attractive. But before accepting it. a review of the assumption made is required to verify whether any other Vitiating Conditions have crept in.

Quality of the product is also an important consideration. In the operation of the looms, it is only a shuttle run out or weft break that stops the loom In a case of a warp break, the loom does not stop. The continued running of the loom with a broken warp is very undesirable Firstly the quality suffers Secondly, this raises the probability of it breaking the other threads and fouling the loom, in which case the repair will take a much longer time and also may result in the weaver having to undo

quite a large length of woven cloth to get the loom back into proper condition.

So, a review of the simulation studies was made regarding the length of time looms were allowed to run with broken warp. It was found that under the assumed set of instructions, looms had been allowed to run for even more than 2 mts. with warp broken. This condition will completely vitiate the cost comparisons. It was desirable to impose a maximum limit on the time a loom can run with a broken warp. It was hence necessary to introduce a rigorous patrol routine and modify the emphasis on immediate restarting of a machine which has stopped.

The simulation study on 6 looms per operator is now being redone with the following instructions to the operator

1. He patrols the looms in the specified manner
2. When he notices that a loom has stopped, and has done a patrol of *all* the 6 looms, he attends to the loom that has stopped and restarts the loom
3. If during a patrol he notices a broken warp, he attends to that loom immediately and then *completes* the patrol even if he finds a loom has stopped in the meanwhile
4. Before he stops his patrol to *restart* a loom that has stopped, he will have seen that there are no warp breaks on the other five looms
5. After restarting a loom that had stopped, he must complete one patrol round before attending to another loom *even* if that loom had stopped during the time he was restarting the first loom
6. The patrol round takes 0 2 mts and the instructions ensure that no loom will run for more than 1 minute with broken warp

Mr. Gopal and Mr Balgopal are continuing on the assignment and are conducting the above studies

... valve will have to be replaced.

ACTION TAKEN

1. I have replaced the pancake pipe by a new one. I have explained in details the possible reasons for corrosion of the pipe and have suggested that water pre-heater be installed.
2. Top refractory has been replaced.
3. The 3-way valve has heen rectified and refitted in the fuel system

ACTION TO BE TAKEN BY BRANCH OFFICE/HEAD OFFICE

Report on water analysis available in our files be studied and if necessary Branch Office may confirm in writing the desirability of installing a pre-heater tank and offer for the pre-heater as well as for the 3-way valve be sent to the client.

Sd/-

CUSTOMER

rely

16

SPECIAL REPORTS : IDEA PROPOSAL

In the case of an idea proposal,
the customer is **inside** the organisation

In many ways, an idea proposal
resembles the business proposal

Ideas have a better chance of acceptance
when they are put in writing.
The reader can study the report more leisurely
and more than once if necessary
The reader can see for himself
the additional information he will need
before he decides.

Unless we realize the presence of inertia
in most work situations,
we will not quite appreciate
why we should do the selling
even to someone within the organisation
Status quo has its charms—
'comfort', for example.
A new idea is a disturber of the peace
If people can play it down, they love to
This is not a reflection on anybody.
The day-to-day work pressures being
what they are,
this is a natural human tendency.
Unless, therefore, the idea is attractive
and put across in an 'acceptable' way,
the idea proposal may remain a proposal.

When we do make a proposal,
we want it to be implemented.
This means it should be read,
understood and responded to—
and we should **facilitate**
all these three processes of being read,
being understood and being responded to.

Firstly, we have to gain the reader's attention.
He should see promise in it :
he should feel rightaway
there is **something in it for him.**

If we say, for example,

> I have an idea which can save the department a lot of bother and 10,000 rupees a year. A new modified approach to printing .. . ..

we can expect one effect.
We will get another,
if we present the same fact
in another way, namely:

> I propose we go in for a new approach
> to printing our stationery needs.
> It would be more economical . ..

Which of these two would appeal to the reader ?
The answer calls for a chapter
on reader psychology.
Suffice it for our purpose to know
that a positive approach appeals to the reader.
More so, if it is backed by specific facts,
verifiable figures, and comparable examples.
These should strengthen
his initial favourable reaction.

We should anticipate the questions
and answer them in the course of the report
We should visualise the likely objections
that may be raised
and they should be met too.

PRESENTING THE REPORT

Timing is another factor
to which we should give conscious attention.
We have to get the reader in a receptive mood ;
certainly we shoud avoid
creating an unhelpful mood.
This seems like saying the obvious,
but many tend to lose sight of this point
in their enthusiasm for their ideas.

AN OPPORTUNITY

Let us **create** an opportunity for ourselves

We may or may not receive an invitation
to prepare an idea proposal.
Instead of waiting for an invitation
from higher-ups,
we can well initiate a proposal ourselves.
Even the best-run organisations
have scope for improvement
in every field of action.
Improving methods in one's own department
is a managerial responsibility.
This is not merely a responsibility
but an *opportunity* to advance one's career,
and we often miss this opportunity by default.
Let us take to this type of report-writing
in a big way.

WHY REPORTS FAIL ?

One or more of the following reactions has been noted and we better be aware:

a The report looks lengthy and formidable. Let me hold it over for study at some convenient time (which never comes).

b I have to give a second reading. I don't get a clear view of the effects of the proposal. I am tempted to do the safe thing to avoid action — to circulate it!

c I don't quite agree with the description of the current system. I feel like attacking the report therefore.

d The criticisms are annoying. I shudder to think the boss will read them. So I feel like killing the document ; I find every argument to counter the acceptance of the proposals.

e The new ideas are not as clear to me as the existing ones. I don't feel like asking for elucidation, however. So I avoid action under some pretext.

All this is a daily occurrence and there is no exaggeration.

April 8, 1970

PERSONNEL DIRECTOR

REWARDING THE PROJECT STAFF FOR THEIR VERY GOOD PERFORMANCE.

BACKGROUND

Some eight months ago I had recommended payment of a site allowance to the people associated with the Project. This point was discussed at great length and it was finally decided that granting a site allowance at that time was likely to create complications, and instead, consideration should be made on merits towards the end of the Project I am giving my recommendations today in the light of the above decision

Nature of project assignment

A very brief review of what the people covered by the present recommendations were required to do, may not be out of place

The Project was conceived several years ago, but it started taking tangible shape in the beginning of 1967 when orders for four major items of equipment were finalised From then on, till about October 1968 we continued to have only a skeleton staff which was mostly busy in finalising the engineering details of the project and assisting the then comparatively low activity at the site In January 1969 lean concrete was poured for the major equipment foundation and in twelve months thereafter the first phase of the Project was commissioned In another three months the entire Project was commissioned

In this short span of fifteen months the activity at the site was exceedingly concentrated. The following figures will give a brief idea of the same We spent about Rs 80 lakhs in civil engineering, Rs 60 lakhs in fabricating and

erecting the structurals, Rs 20 lakhs in erecting and commissioning the equipment, Rs 15 lakhs in arranging the utilities and Rs. 10 lakhs in procuring the cables and laying them

The people concerned helped in preparing the basic data so that each item of expenditure mentioned above proved most productive They worked at the site, associated with the various contractors, helped them to organise their work and expedited the same They took responsibility for the receipt of the equipment costing over Rs. 3 crores, after counting and/or broadly inspecting the various items, informed damages and shortages to the proper authorities, ensured that they were made good and sorted out the packages at the time of erection They had to hold discussions with different Government agencies and the consulting engineers to sort out different problems which used to arise from time to time. Finally since everything was new and not necessarily in their own line they had to strain very hard to be on top of the problems they were handling.

The magnitude and complexity of the assignment, together with the comparatively short time in which it was to be completed necessitated team work of a higher order There were no quarrels. Nobody shirked his responsibility or tried to pass on the blame to others Generally, all worked long hours and quite often without taking the normal offs or holidays. The morale was very good. No issue was made out, even though such essential facilities as wholesome food and good drinking water could not be provided for months on end.

I cannot say that what they have done is faultless or that it could not have been improved upon There were some lapses and inadequacies. But on the whole the performance has been praiseworthy. What is more, the people concerned have learned a lot and they are now more useful to the company The special consideration proposed is by way of some recognition of these facts

Certain additional points borne in mind before formulating the recommendations

I have kept in mind the following additional points before formulating the actual recommendations:

a) Gross disparities in the total emoluments of individuals carrying equal responsibilities (and who can see each other's performance) should be evened out, at least to some extent.

b) Number of special increments, if any, should be in accordance with the individual performance.

c) The salary structure at our other Divisions should not be much disturbed because of the special consideration proposed at the new place.

Recommendations

My recommendations are as follows:

a) All Assistant Engineers, Junior Assistant Engineers and graduate engineer trainees associated with the Project for a period of not less than four months, should be given lumpsum payments calculated at the rate of Rs. 90/- per month of *association*, with a ceiling of 12 months.

b) Other secretarial and office staff should be paid as above but at the rate of Rs. 60/- per month.

c) Seven days additional leave should be credited to the privilege leave account of those who were associated with the Project for 12 months or more as on 1.4.1970.

Sd/- P. S. Puri,
Project Executive.

P. S.: The above recommendations have been made with full concurrence of Mr. J. K Lulla and K L. Jones. The

latter has asked me further to add his following observations in this note:

a) He considers the overall performance of the Project staff as extremely satisfactory even by Western standards.

b) Any amount of money cannot really pay for the enormous strain of those days But it is not necessary to pay for it, either. It was part of the game and all people took it that way. The recommendations are more in the nature of token appreciation.

c) He would appreciate it still further if the amounts mentioned in recommendations (a) and (b) above are paid in cash by the Chief himself, calling the individual concerned and chatting with him for a couple of minutes

March 1, 1965

M D.

SOME THOUGHTS ON THE BEST UTILISATION OF MY SERVICES BY THE COMPANY, BASED ON SELF-ANALYSIS.

1 Some 15 days ago, we had a meeting in your office when the above subject was discussed. As per one of the decisions taken then, I have prepared this note

2 Following is a profile of myself drawn with maximum objectivity at my command

3. *Weak points*

a) I am not an engineer and my technical knowledge is limited to the comparatively little experience I had in Ibcon and this company

b) I am not a man of the masses I do not like to steam-roll opposition and dominate others. I cannot become unscrupulous any time I do not try to convince people on points on which I am not convinced. But all these characteristics are needed some time or the other in leading men in a line position

c) I dislike waiting upon anybody or asking for any favour even indirectly and am not particularly interested in social parties.

d) I have a tendency to be aloof

e) I do not have dazzling brilliance

f) Occasionally, I talk little too much on a given topic. Perhaps, this is due to hyper-sensitivity in respect of certain issues

g) I have no ambition to become No 1 man in any organisation now or in future

4. *Strong points :*

a) I am above average in intelligence, grasp, retentivity, and general knowledge.

b) I can present my thoughts, in writing as well as in talks, logically and clearly.

c) Generally, I am methodical

d) I enjoy figure work and analysing different issues.

e) My experience is quite varied and it has improved my judgement and decision-making ability.

f) I seldom get confused or non-plussed.

g) My appearance is presentable; I can be frank without being offensive; my natural inclination is towards being honest, sincere, and straight-forward and generally I get along well with others.

5. Most of the above characteristics are changeable. I also feel reasonably confident that some of the drawbacks can be improved with efforts. But, as of date, they together represent my own profile as I see it.

6. Listed below are certain jobs which a person of the above description may carry out successfully:

a) Part of the personnel work, i.e.

(i) recruitment
(ii) training and development at all levels
(iii) employee counselling
(iv) merit rating
(v) looking into grievances, etc.

b) Any assignment which requires clear understanding of the objective, collection of necessary data from different sources, analysis of the same, and presentation of the findings in a neat and orderly

manner. Examples of such assignments would be, to

(i) carry out non-technical analysis of different projects to assist decision making
(ii) set up a Market Research Unit
(iii) prepare long range plans for the organisation
(iv) work out a blueprint for the employee compensation pattern, over years
(v) prepare a procedure manual, etc.

c) Drafting of

(i) contracts,
(ii) representations to different authorities
(iii) ghost articles for other executives, etc.

d) Preparing the foundation for inter-company liaison on such subjects as management controls, personnel, industrial engineering, and so on.

e) Specialising in any field where mathematical techniques have applicability.

7 6(a) and (b) above are of immediate importance to the company and cannot be neglected The work covered under 6(c) comes only once in a way 6(d) and 6(e) are also important and though we have not started any work in that direction, we can profitably do that hereafter.

8 At present, I look after 6(a) along with other personnel responsibilities. The remaining jobs, i e those from 6(b) to 6(e) have not been allocated to any one individual.

9. I am not quite clear myself about the relative priority between 6(a) and 6(b). Both appear to be important and neglect of either would tend to offset our long-term interests.

10. Assuming that we are looking out for persons to handle one or more of the above jobs, it may be easier to get a

candidate for 6(a). Personnel field has been drawing competent individuals for some years now, and we can locate a suitable man with some efforts. It will be more difficult to get a required type of person for the remaining jobs mentioned above. They, particularly 6(b) and 6(e) represent newly developing disciplines in which few persons have entered so far.

11. I think 6(a) and 6(b) are mutually exclusive. In other words, even if a person is competent to carry out either of them equally well, he will not be able to do full justice to both of them simultaneously, for sheer limitation of time.

12. As luck would have it, my own aptitude is more towards 6(b).

13. On the basis of the above analysis, it seems logical that

a) we try to get another person to handle 6(a)
b) I am earmarked for 6(b), and
c) 6(c), (d) and (e) are taken on hand at suitable time later.

14. Some discussion about the designation of the person who handles such work as mentioned in 6(b) to 6(e) above. may be in order. Normally, a designation should

a) connote as realistically as possible the nature of the work of a man and his status in the organisation hierarchy
b) help him in getting cooperation from different quarters, and if possible
c) satisfy his vanity.

15. Following are some of the possibilities:

a) Special Assistant to M.D.
b) Coordination Manager
c) Economic Adviser
d) Director of Management Analysis

16 (c) and (d) above are realistic enough but may appear high sounding; (b) may appear innocuous and tame; (a) may or may not give the idea about the work. It is somewhat embarrassing for me to discuss this topic further, because I may be one of the individuals involved in it

17 We may give final shape to our ideas after you find time to go through this note

Sd/- D. E. Fonn
Senior Executive (Personnel).

17

SPECIAL REPORTS: BUSINESS PROPOSAL

The commonest report is
the one carrying a proposal.
This proposal may be for an outsider,
a customer, an insider or the immediate boss.
In the last section
we discussed the idea proposal;
in this the business proposal.

BUSINESS PROPOSAL

We are in the air-conditioning business,
let us say.
A new office building is coming up
and we are competing with others
to get the business.
In such a situation,
we may make a special report
containing a business proposal.

Besides the usual requirements of a report,
such a business proposal report
calls for special points of emphasis:

1. **Bind the proposal in an attractive cover.** While the matter-of-fact approach is in order in many situations, in an important situation like this, we should give importance to the psychological first-impression effect of the package. Even a minor item like a good cover helps to strengthen the impression that the proposal has been carefully planned and prepared.

2. **Prepare a neat and complete title page.** This page should carry the information the customer will need when he wishes to reach us either for further information or for a discussion finalising the deal. The information will include the name of the representative, his address and his phone number.

3. **Include a complete and accurate table of contents.** This is to help the customer locate easily any sections he would like re-read.

4. **Write the proposal with the customer's needs foremost in mind.** Obviously, the customer will look at the proposal from the point of view of his needs. If we could do that too, the customer can understand our proposal more readily and respond to our suggestion more favourably. We have to slant the facts and plan the organisation suitably of the proposal.

5. **Use a simple, direct style.** Let us adopt a style that is clear, readable and, of course, persuasive.

AN ACTION PLAN

Every fair-sized organisation can consider implementing all or some of the elements of this **action plan.**

1. To arrange a **presentation-discussion** on the essentials of modern report writing.

2. To arrange a **skill development programme** in effective written communication with particular reference to report writing—for beginners and interested personnel.

3. To arrange a **refresher-discussion** for all personnel who write or read reports in an organisation—at least once in two years.

4. To prepare and distribute copies of a style manual. This item will slant the general information to the **particular requirements** of the organisations. It may also give details of facilities available, such as cameras, printing facilities, block making, colour printing, etc., with the organisation. It can give the sources from which these and assistance in the use of these can be obtained (e.g. We have an offset machine which can print in two colours ; we have photographing facilities).

5. To build a nucleus of a a **Reference Library** which library will have books on English grammar, composition and readability.

6 To consider having a **technical editor,** if the nature and size of the report-writing activity warrants such an appointment (as in the case of a Research Laboratory)

7. To require him (the technical editor if one is appointed):

(a) to explain to the concerned his role, namely, to assist the report writers on the literary and the presentation (including publication) aspects of report writing;

(b) to emphasize that his is a specialist service; and

(c) to indicate how to make the best possible use of him.

8. To require him to organise and administer elements 1 to 5.

9. To require him to highlight approved writing practices with a view to keeping the awareness level of the subject high, through **weekly news sheets** and the like.

10. To arrange periodically—once in three years, say—for **a review** of the reports and report-writing practices in the organisation by a trained, objective outsider.

APPENDIX

A REPORT CHECKLIST

Both as a reminder to sound practices and as an aid to 'audit' or grade reports, a checklist comes handy. Here is a good one[*] Although the check list covers the longer, more formal types of reports, it can easily be adapted to other forms.

1 THE REPORT TITLE:

(a) Is this title complete? The title should tell the reader what he may expect to find in the contents, and it should rule out what he may not expect to find. Although requirements differ with the case, these aspects of the problem should be considered in constructing the title:

1) who
2) what
3) where
4) when
5) why
6) how

(b) This title is too long. Try to be more economical with words

(c) This title is too short A scant title is broad and usually covers too much ground.

(d) In typing the title, break it at convenient breaking points—that is, at the ends of thought units rather than in the middle of thought units.

2 TITLE PAGE

(a) For best optical effect, center the parts between left and right margins. Here the lines are off centre

---

[*] From *Report Writing for Business* by Raymond V. Lesikar. Reproduced with permission of Richard D Irwin Inc., Chicago

(b) Too much or too little space between the parts detracts from the appearance of the page. Check the text illustrations for better placement of the parts

(c) For better balance, use (1) fewer and longer lines (by combining some of the items) or (2) more and shorter lines.

(d) Check this part for completeness. Usually the recipient and the writer should be identified by name, title, company or organization, and address.

(e) Date the report specifically—by month, day, and year, if possible, but at least by year.

(f) Preferably single space units of three lines or less. Double space longer units

3. GENERAL LAYOUT AND MECHANICS

(a) Fit the layout of the page to the space available This page is
   (1) too fat
   (2) too low, high, or off center (as marked)
   (3) too tall and thin

(b) Neat typing? Strike-overs, smudges, and erasures detract from the report's message.

(c) Keep the right margins relatively straight. Successive lines falling under or over the right-margin boundary offend the eye.

(d) The spacing could be improved here.
   (1) Too much space used here.
   (2) Not enough space here

(e) Follow the conventional system of page numbering:
   (1) Use small Roman figures (i, ii, etc.) for the prefatory pages
   (2) Use Arabic figures (1, 2, etc) for all other pages

(3) No numbers are needed on the pages preceding the table of contents. But these pages are counted in the numbering sequence.

(f) This page is choppy. Consider lengthening or combining the paragraphs for more logical organisation and better appearance.

(g) This page is too heavy. Consider breaking down these paragraphs into shorter ones.

(h) Your system of captioning could be improved. The captions should tell the reader at a glance the relative importance of each part

(i) Don't let a caption appear at the bottom of the page without at least two lines of text. Captions placed this way appear to be headings to nothing.

4 LETTER OF TRANSMITTAL

(a) Begin the letter with a direct presentation of the report. The primary objective of the letter is to transmit the report, and there is no reason for delaying the message with slow explanation or other material

(b) Refer incidentally to the authorization by date and nature (oral, written) somewhere early in the letter.

(c) (For combination transmittal-synopsis letters) Move smoothly into a review of the highlight facts and conclusions of the report. (For additional check-list points on this type of letter, use the appropriate notes under 5. Synopsis.)

(d) (For letters which do not serve also as a synopsis) A digest of the report findings is better left for the synopsis.

(e) Your choice of subject matter for the letter could be improved. Perhaps the best choice is some appropriate talk about the report—comments which will help the reader to understand or appreciate the report

(f) A statement of your personal attitude toward the assignment is appropriate It may well come at the close of the letter.

(g) Make this part sound more sincere. It is easy to overdo words of appreciation, and it is easy to make them sound like rubber stamps. You are most likely to avoid these pitfalls by making your words fit this one case and by writing in good conversational language.

(h) A friendlier, livelier style would improve this letter. Except in the more formal situations, the transmittal letter is best written in good personal language (with personal pronouns I, we, you, and such). This is your one chance to address the recipient personally

5. SYNOPSIS

(a) (If direct order assigned) Begin with a statement of your main finding, conclusion, or recommendation.

(b) (If indirect order assigned) Begin with a brief orientation to the study

(c) Briefly summarize the essential introductory facts Consider these for completeness. for, by whom, when what about, and how solved

(d) Summarize the parts in the order treated in the report.

(e) Coverage of this part is out of proportion

(1) This coverage is scant Highlight more of the supporting facts The synopsis is not just a review of conclusions It includes all of the foundation facts their analyses, and the conclusions—in summary form

(2) This coverage is too much in detail. The task of the synopsis is to summarize

(f) Your writing is not so concise as it should be. The objective of a synopsis is to cover the ingredients

of the report in a minimum of space. Economy in the use of words is a main requirement.

(g) This writing tends to be dull. Try not to let your efforts to write concisely deaden your writing style. Your objective is to summarize concisely without sacrificing good writing style.

6. TABLE OF CONTENTS

(a) Be consistent in the use of type and capitals. Although you may choose from a number of type forms (capitals, capitals and lower case underscored, and such), consistency is a logical requirement.

(b) This spacing is not the best for eye-pleasing effect.
    (1) These parts are crowded. Better double space here.
    (2) Here the parts are strung out too much. Single spacing would be better.

(c) Use leader lines (preferably periods with spaces intervening) to relate the part to the page number.

(d) Keep the parts in line. Captions on the same level should begin at the same spot. Roman numerals in the outline and page numbers should be aligned on their right digits. Periods in the leader lines should be lined up.

(e) Elements which precede the contents table need not be listed. Thus, the only prefatory part listed in the contents table of the conventional long, formal report is the synopsis.

(f) Do not give the appendix or the epitome Roman number status in the outline. They are appended parts of the report and are not part of the report message.

(g) These parts are not arranged in the best order of coherence. Review the logic of your plan for a better sequence.

(h) These topics overlap. In general, each section of the report should be mutually independent Although some repetition and relating of points may be in order, too much of this is a sign of illogical organization

(i) Do not let one major section account for the entire body of the report. Except in the very minor problems, it is a rare case in which more than one aspect of the problem does not need to be discussed.

(j) One-item subdivisions are illogical. You cannot divide an area without coming up with at least two parts

(k) More control captions are needed here Subcaptions to this caption would show better organization

(l) The subcaptions, in good order, should cover all of the territory fenced in by the major captions —no more or less

(m) This organization plan is not the best. Restudy the problem for a more logical plan of presenting this report.

(n) These parts are not equal in importance So do not treat them as being equal in the development of the problem

(o) (If talking captions assigned) These captions do not talk so well as they might. Talking captions not only give the subject covered, but also they tell what is said about the subject.

(p) Co-ordinate headings should be parallel in grammatical structure. That is, if caption A is a noun phrase, so should captions B and C be noun phrases. If 1 under A is a sentence, so should 2 and 3 be sentences.

(q) These captions tend to be too long Good captions use the minimum wording which will convey the meanings intended.

(r) Avoid monotonous repetition in the captions. Vary the wording or the construction patterns.

7 THE INTRODUCTION

(a) Although the reader's needs for orientation will change with the problem, these areas generally need to be covered in the report introduction:

(1) How the report came about: time and nature of the origin of the problem, identification of the participants, and the like

(2) What the problem is: objective, scope, definitions background information, etc

(3) How the problem is solved: description of the sources of information or research procedure employed in solving the problem

(4) How the information is presented in the report: a preview to the organization of the report

(b) Work for a smooth, natural writing style in this part.

8 COHERENCE AND TIGHT CONNECTION

(a) For the long, formal reports, short summary-previews are needed at important stages of the progress These parts complement the preview section which typically ends the introduction of a formal report. Summary-preview parts are useful to let the reader know periodically where he is in the report plan

(b) Your transition is weak here Avoid abrupt changes of thought

(c) Here you could improve your paragraph construction by selecting a topic sentence and leading from it.

(d) Don't lean heavily on the captions. A well-written report should read clearly even if all captions are taken out.

(e) This section ends abruptly. A summary or concluding statement would help.

9 THE WRITING OF THE REPORT

(a) Is this writing adapted to the audience? It appears to be (1) too heavy or (2) too light for your reader. In general, this criticism concerns the lengths of your sentences and your choice of words Better test your writing for readability

(b) Avoid the overuse of passive voice

(c) This writing style is dull Work for a fast-moving and interesting writing style—one that is live with concrete and action words

(d) Your writing should be more concise. Be economical. Try to cut down on words without sacrificing meaning

(e) (If conventional formality is required) Write in the third person Avoid these slips from impersonal to personal writing.

(f) Be consistent in time viewpoint Illogical shifts from past to present and from present to past confuse the report message Preferably write in the present time viewpoint, treating all things as they relate to the time of writing

10 SUPPORTING FACTS

(a) The text must tell the story, so don't just refer the reader to a chart or table and let it go at that.

(b) Supporting facts are necessary for any conclusions. Your presentation is (1) lacking in supporting fact or (2) cluttered with too much detailed fact. (Minute detail might well be presented in summary tables)

(c) Don't lose sight of your objective You must do more than present information Adapt this information to the problem

(d) Beware of unsupported, unqualified statements. Back up these parts with fact.

(e) Opinions and facts should be clearly differentiated. Label opinions as such.

11 GRAPHIC DISPLAY

(a) The layout arrangement appears to be crowded or awkward at the points indicated. Particularly don't crowd the illustration or table with the text It would be well to triple space (at least) before and after it.

(b) Here the layout appears to be needlessly spaced out.

(c) If you have three or more of one type of illustration (charts, tables, maps, etc), group them together for the numbering sequence within the report. For example, a report with three charts, four maps, and three illustrations would have these graphic aids numbered like this: Charts 1, 2 and 3 ; Maps 1, 2, 3, and 4 ; and Illustrations 1, 2, and 3 If you have a mixture of types, with only one or two of each, refer to them as "Figures" and number them all in the same series. For example, a report with one chart, two maps, and three illustrations would be numbered like this: Figures 1, 2, 3, 4, 5, and 6.

(d) Titles for all tables are appropriately placed above the table. Titles for all other graphic devices conventionally appear below the illustration.

(e) The table or graphic display number may appear either on the line with the caption or on a line by itself and centered above the caption.

(f) It is conventional to number tables with Roman numerals and all other displays with Arabic numerals. There is convention, too, for placing

the caption of tables in a higher type than the titles of other forms of graphic display.

(g) You have too much here for one clear picture Consider (1) breaking it into logical parts for regular display or (2) placing it in the appendix section

(h) If the table or chart cannot be considered essential to a clear understanding of the context, it should be placed in appendix section

(i) Tables are useful, but tables alone are not enough They are not in the true sense graphic—they don't tell the story instantly

(j) Place each graphic aid as near as is practical to the spot where you talk about it Placing all your graphic aids in the appendix is easy for the writer but hard on the reader who must flip pages back and forth for reference

(k) The type of illustration chosen here is not the most appropriate one to display this set of factors

(l) Possibly this is your very best work, but it falls down in over-all appearance and quality Clear, straight-inked lines neatly drawn, possibly with the use of cross-hatching or color, are necessary for the best graphic display

(m) Overlarge illustrations break the continuity of the reading Couldn't you have reduced the size here without hurting the effectiveness?

(n) The together the illustration and text by referring the reader to the illustration, and do it when you want him to look at it

(o) Make incidental your references to illustration material Instead of using a separate sentence, use statements such as "as shown in Figure 2," "(see Chart 5)," and such.

Some Words People Like

Ability
abundant
achieve
active
admirable
advance
advantage
ambition
appreciate
approval
aspire
attainment
authoritative
benefit
capable
cheer
comfort
commendable
comprehensive
concentration
confidence
conscientious
cooperation
courage
courtesy
definite
dependable
deserving
desirable
determined
distinction
diversity
ease
economy
effective
efficient
energy
enhance
enthusiasm
equality
excellence
exceptional
exclusive
expedite
faith
fidelity
fitting
genuine
good
grateful
guarantee
handsome
honesty
harmonious
helpful
honour
humour
imagination
improvement
industry
ingenuity
initiative
integrity
intelligence
judgement
justice
kind
lasting
liberal
life
loyalty
majority
merit
notable
opportunity
perfection
permanent
perseverance
please
popularity
practical
praiseworthy
prestige
proficient
progress
prominent
propriety
punctual
reasonable
recognition

recommend
reliable
reputable
responsible
salient
satisfactory
service
simplicity
sincerity
stability
substantial
success
superior
supremacy
thorough
thoughtful
thrift
truth
unstinted
useful
utility
valuable
vigour
vital
vivid
wisdom
you
yours

Some Words People Dislike

abandoned
abuse
affected
alibi
allege
apology
bankrupt
beware
biased
blame
calamity
cheap
collapse
collusion
commonplace
complaint
crisis
crooked
deadlock
decline
desert
disaster
discredit
dispute
evict
exaggerate
extravagant
failure
fault
fear
flagrant
flat
flimsy
fraud
gloss over
gratuitous
hardship
harp upon
hazy
ignorant
illiterate
imitation
immature
implicate
impossible
improvident
insolvent
in vain
liable
long-winded
meager
misfortune
muddle
negligence
obstinate
opinionated
oversight
plausible
precipitate
prejudiced
premature
pretentious
retrench
rude
ruin
shirk
shrink
sketchy
slack
smattering
split hairs
squander
stagnant
standstill
straggling
stunted
superficial
tamper
tardy
timid
tolerable
unfair
unfortunate
unsuccessful
untimely
verbiage
waste
weak
worry
wrong

PROOF READER'S SYMBOLS

PUNCTUATION

(.) Insert period.
,/ Insert comma.
;/ Insert semicolon.
(:) Insert colon.
'/ Insert apostrophe.
"/ Insert double quotation marks.
I—I Put in one-em dash.
I——I Put in two-em dash.
=/ Put in Hyphen.
?/ Put in question mark.
!/ Put in exclamation mark.

INSERTION AND OMISSION

stet Don't make change indicated; let it stand as it is.

. . . . A line of dots is placed under the element that is to remain as it is.

KIND OF TYPE

Rom. Change to Roman type.
Ital. Change to Italic type.
A Change to capital letter.
A Change to small capital letter.
a Change to lower case, or small letter.
bl. Change to black, or bold face, type.
w.f. Substitute type from regular font for that of wrong font.
X Substitute perfect for imperfect type.

PARAGRAPHING

¶ Begin a new paragraph.
no Don't begin a new paragraph.

SPACING

vvv Correct uneven spacing between words.
Put in space.
⁀‿ Close up by taking out all spacing.
⁀‿ Close up but leave some space.
⊥ Push down a slug that prints.
//// Put in thin space between letters, i. e., "letter space."

POSITION

[Move to the left.
] Move to the right.
⊓ Move up.
⊔ Move down.
□ Indent one em.
ll Make lines parallel.
= Make letters align.
tr. Transpose order of words, letters or figures.
Qu? Out. Look this up to see whether or not it is correct.
See copy See what has been omitted in X proof by comparing with copy.

NOTES ON USING A LIBRARY

Given a project, the problem lies in collecting data from the published material on the subject. Professionals make it a point to share their experiences through articles, monographs and books The business or house journals also keep collecting and publishing news and views

First, find out which of the following libraries will readily give you information on the subject (a) Public library (b) University library (c) Special libraries as The Indian Institute of Management or Indian Institute of Technology or University Department of Technology library or (d) Government libraries

Meet the librarian and state your problem in outline He is in a position to direct you to a set of books and pamphlets on the subject as also to bibliography or indexes of articles in periodicals

Key to the Library Catalogue · The typical library Catalogue is an alphabetical Index in card form to the books and Publications in the library It serves as a guide to the book collection It is the chief means of locating material in a library.

The most characteristic arrangement of a library catalogue is in dictionary form, with authors, titles, and subjects all filed in one sequence, namely, alphabetical. In most libraries every book has at least three catalogue entries·

a) under the author's name
b) under the title of the book
c) under the subject heading

A catalogue has the following proforma.

NO	AUTHOR'S NAME . . ....
	NAME OF THE BOOK . .
	NAME OF THE PUBLISHER . . .
	YEAR OF THE PUBLICATION .. . ..
NO. OF PAGES	

On the card we may find a number such as 658.7784 called Classification No. according to Dewey Decimal Classification. The classification is intended to organise books and other materials by subject fields. It helps to arrange the books on racks. To find the book which has a classification No. 658.7784 the first move is to go to the rack labelled 600, then find 658, and then 658 77, and finally 658.7784. Now the particular book is arranged within the number in alphabetical order by the first three words of the author's surname. e.g. 658 774/Alb, 658 774/Kar, 658.774/Tac etc

The Library may not have all the required material on the given subject To supplement your needs, do not forget to refer to printed bibliographies—general as well as specific. There are periodical bibliographies—say the British National Bibliography. The introductory pages give the method of using the volume Take for example the subject of Packaging from the Management's point of view. Look up 'M' in the alphabetical index. Management is listed there against the classification number 658. Under Management again in alphabetic order, look for 'P' and then for 'Packaging'. Against Packaging will be a classification number 658 7884. In case you have not found 'Packaging' listed under Management, turn to 'P' and then to Packaging in the alphabetical index You may find 'Packaging' listed in relation with other subjects, e g. Flowers, Manufactures etc Now you pick up the classification number 658 (Management) You will definitely choose 658 7884. Now turn to the main bibliography, and under this classification number you will find all the books on 'Packaging' published during the year

You may also refer to special bibliographies on the given subject if available in the library

Dewey's scheme is essentially the concept of dividing all knowledge into 10 major groups thus·

000 Stands for general works, Bibliographies encyclopedias, etc

100 Philosophy

200 Religion

	300	Social Science
	400	Language
	500	Pure Science
	600	Technology
	700	Arts
	800	Literature
and	900	History

Now if we want some topic in Business say, we look for Business and we find it under 600 and find that it is classified as 658 Therefore, all books relating to Business will be classified in 658.

Now the special areas within the large classes are also given numbers with the parent number. Thus, in the field of Business, following is the Classification

Management : 658

General Works	658
Company promotion and Finance	658.1
Plant	658 2
Personnel	658.3
Production	658 5
Research and Development	658 57
Mercantile Business	658.7/8
Purchasing	658.72
Stock control, Store keeping	658.78
Packaging	658 7884
Transport and Delivery	658 7885
Selling	658.8
Management in Special Industries	658 9
Management, Business-linear Programming—Mathematics	519.9(1)
Management, Business-Mathematics	510 aa658
Management. Busines-Bibliographies	016.658
Management, Business-Statistical Mathematics	519 a6658
Management, Business-Biographies	926 58
Management, Business-Technical Education	378 99658
Management, Business-University Curriculam	378 s658
Management, Farming	631.1
Management, Printing	655. fk

In respect of some topics you can start with an encyclopedia In books you find the basic facts on a subject. However current facts and developments may not be found there ; for them, we have to turn to periodicals

The Periodical Indexes will give us the title of the article and the source of the article with the name of the journal and date

Some of the better known Periodical Indexes are

a) *Pool's Index to Periodical Literature 1802-1907.* Boston, Hougton, 1882-1908. 7 Vol.

Indexes 590,000 articles in 470 American English periodicals ; subject Index only.

b) *19th century Readers' guide to Periodical Literature 1890-1899* With supplementary Indexing 1900-1922, New York, Wilson, 1944 2 Vol.

Authors and subject index to 51 periodicals, mainly for the period 1890-99

c) *Reader's Guide to Periodical literature 1900 to date* New York, Wilson, 1905 to date.

The most used of periodical Indexes An author, subject and title index to about 130 leading General magazines since 1900.

d) *Social Sciences & Humanities Index,* 1907 to date New York, Wilson.

Title varies· V 1-2, Readers' guide to periodical literature supplement , V 3-18, International index to periodicals , V 19-1 Social Sciences and humanities index

e) *Public affairs information service bulletin* New York Public Aflairs Information Service, 1915 to date

Usually cited as PAIS Issued in three forms. (1) weekly bulletins. (2) cumulation published five times a year, the fifth cumulated issue forming (3) the permanent annual volume.

A subject index to the current literature in its field—books, documents, pamphlets, articles in periodicals, multigraphed material, etc. Includes selective indexing to more than 1000 periodicals.

f) *Subject Index to Periodicals* · 1915-61 London. Library Association, 1919-62, Annual

An English index, covering the contents of about 350 British periodicals In 1962, divided into two separate Indexes

g) *British Humanities Index* 1962 to date London Library Association, 1963 to date Quarterly and annual Indexes 280 periodicals relating to "arts and politics".

h) *British Technological Index* 1962 to date London Library Association, 1963 to date, Monthly and Annual Index technical articles in 400 British journals

i) *Index India* 1966 to date A Quarterly Documentation List of Selected material published on and in India by Rajasthan University Library, Jaipur

j) *Indian press index,* 1968 to date Delhi, Delhi Library Association A monthly index including all the signed and unsigned articles, special write-ups, editorial and important statements and letters published in 25 daily newspapers of India

k) *Guide to Indian periodical literature :* 1964 to date Gurgaon, Indian Documentation Service Quarterly with annual

A cumulative subject—author index to articles from about 150 selected Indian periodicals in social sciences and humanities

PAMPHLETS Certain libraries keep Pamphlets classified under subject Index and later alphabetically These

pamphlets are also excellent sources of recent information. If outdated, it gives the trend of thought existing when the pamphlet was published.

CLIPPINGS Valuable material is often available in newspapers. To facilitate the research student, clippings are mounted on boards and placed subjectwise in alphabetical order. Such clippings give very valuable information, at times skipped over by journals and books.

These probes however may not be enough in certain studies and it would be necessary to get more information. Here MICRO FILMS, MICRO CARDS, are of great use. Entire books not readily available or out of print are at times filmed and catalogued. The USIS, TIFR or BARC for example, have number of microfilms of books and periodicals volumes. It may also be necessary to write to libraries outside the country for material published there. Occasionally *Consulates* may also be approached for information.

YOU CAN'T WRITE WRITING

by WENDELL JOHNSON

THE late Clarence Darrow, while speaking one day to a group of professors of English and others of kindred inclination, either raised or dismissed the basic problem with which his listeners were concerned by asking, "Even if you do learn to speak correct English, who are you going to talk it to?"

What Mr Darrow was contending can be summarized in the statement that the effective use of the English language is more important than the "correct" use of it, and that if you can speak English "correctly," but not effectively, it does not matter very much "who you talk it to." I agreed that day, ten years ago, with Mr Darrow's contention, and I still do, but whereas ten years ago his remarks served to dismiss for me the problem of the teaching of English, they serve now, in a new context of experience, to raise that problem to a position of peculiar educational and social significance For, like many others, I have come to take a serious view of the apparently astonishing discrepancy between the opportunity and responsibility of the teachers of English and the actual contributions which they appear to make to the efficiency and well-being of individuals and of society

The point of view which I have to present with regard to this problem has gradually developed during the decade that I have spent, sitting near the end of the educational conveyer belt, helping to put certain finishing touches on the human products of the scholastic mill. This is a way of saying that my experience has been chiefly with graduate students. When they arrive in the graduate college they have had, as a minimum, sixteen years of formal education During practically every one of those sixteen (or more) years they have undergone some kind of training specifically

Reprinted by permission from *ETC: A Review of General Semantics*, Vol I, No 1; copyright 1943, by the International Society for General Semantics, San Francisco

designed to enhance their skill in the use of the English language. In spite of this, there falls upon me as upon other directors of masters' and doctors' dissertations, the task of teaching graduate students how to write clear and meaningful and adequately organized English.

What are the linguistic shortcomings that the teachers of English seem unable to correct? Or do they in some measure nurture them? First of all, it is to be made clear that grammatical errors are not particularly serious. Whether or not they find anyone to "talk it to," the majority of graduate students have been taught most of the rudiments of "correct" English. In fact, it appears that the teachers of English teach English so poorly largely because they teach grammar so well They seem to confuse or identify the teaching of grammar with the teaching of writing. In any event what they have failed to teach my graduate students about writing is not grammar. It is skill in achieving factually meaningful statements, and skill in organizing statements into an order consistent with the purposes for which the statements are made. The students have not been taught how adequately to achieve either precision or systematic arrangement in the written representation of facts This can be stated in another and more significant way of saying that they have not been taught how to use language for the purpose of making highly reliable maps of the terrain of experience.

These students exemplify the simple fact that although one may have learned how to write with mechanical correctness, one may still have to learn how to write with significance and validity. One of my friends, who is a particularly astute investigator of the psychology of reading, has stated essentially the same problem by saying that the one place in which a child is not likely to learn to read is the reading class, for the simple reason that one cannot read reading. One can only read history or geometry or biology, etc. If the child reads such material in the reading class, then it is difficult to see how the reading class differs appreciably from the classes in history, geometry, and other subjects. If the child does not read

such material in the reading class, then the reading class must differ from these others, but in a puzzling way, for it may be that the reading teacher is actually making the amazing effort to get the child to read reading

In the teaching of writing, or any other of the language skills, the same problem appears One cannot write writing, any more than one can read reading One can only write, just as one can only read, history, or geography, or physiology, or some other such subject about which writing can be done One can, of course, write about writing, but what one writes about writing will have little, if any, significance, except insofar as one writes about writing about something else We have to deal here with a very general, and a very crucial, problem What is true of reading and writing is true, also, of speaking It holds for any kind of symbolizing Just as one cannot, with significance, read reading, or write writing, or speak speaking, except insofar as one reads about something, or writes about something, or speaks about something, so one cannot, with significance, symbolize symbolizing in general except insofar as one symbolizes the symbolizing of something.

It seems clear to me, as I attempt to analyze the writing difficulties of graduate students, and as I ponder over my own experiences as a student of English that these considerations, sketched immediately above, are crucial The teacher of English appears to attempt to place the emphasis upon writing, rather than upon writing-about-something-for-someone From this it follows quite inevitably that the student of English fails in large measure to learn the nature or the significance of clarity or precision and of organization in the written representation of facts

He learns grammatical correctness reasonably well, because that is emphasized But so long as the student's primary anxieties are made to revolve around the task of learning to spell, punctuate, and observe the rules of syntax, he is not likely to become keenly conscious of the fact that when he writes he is above all, communicating If he is

to learn to communicate effectively, he must realize that his first obligation to his reader is not to be grammatically fashionable, but to be clear and coherent. One does not just communicate; one communicates something to someone. And the something communicated is not the words used in the communication, but whatever those words represent. Moreover, the degree to which there is communication depends precisely upon the degree to which the words represent the same thing for the receiver or reader that they do for the sender or writer. And the degree to which they do is an index of the clarity of the communication or written statement. Thus, clarity can be *measured*, not just "felt" or "appreciated," but measured, in terms of the ascertainable agreement between writer and reader, and among various readers, as to precisely what the words of the writer represent.

My graduate students have not been taught this. They write as if they had been trained to observe a principle of *caveat lector*. Such a principle, strange as it may seem, is championed, in one form or another, by certain teachers of English. Mr. Cleanth Brooks, Jr., writing on the subject of communication in poetry in the journal, *American Prefaces*, in 1940, expresses this curious point of view in these words:

> The theory of communication throws the burden of proof on the poet, overwhelmingly and at once—the reader tells the poet: here I am; it's your job to get it across to me—when he ought to be assuming the burden of proof himself. Now the modern poet has thrown the weight of responsibility on the reader.

I have quoted Mr. Brooks because he has succeeded in stating with unusual conciseness this strange notion that the writer is properly under no obligation to be communicative. I do not wish, on the other hand, to be understood as saying that a reader has no obligation to try to meet a genuinely original (and therefore difficult) writer halfway, for obviously many writers and poets, dissatisfied with the cliches of their time and trying to create new ways of feeling (i.e., to recanalize the reader's semantic

reactions), must necessarily rely upon the reader's willingness to accept a revised vocabulary of an unfamiliar set of symbols. But this is a problem only in extremely advanced levels of artistic composition In undergraduate instruction, even to imply that a writer has no obligations to his readers is to become, whether one wishes to or not, and advocate of obfuscation

Such advocates of obfuscation apparently teach fairly well, if it is they who have instructed my graduate students They have never learned, so far as I can see, to take the reader seriously into consideration. They do not, to be sure, artfully avoid clarity, they artlessly fail to achieve it. The contention that in writing they are communicating, that they are addressing a reader, simply strikes them as a novel point of view They do not rebel against it; many of them just don't understand it

This basic notion of communication, however, is not extraordinarily difficult to explain, and as it begins to sink in, and when the students have seen a few demonstrations, not of the reading or criticizing of communications, but of the *process of* communicating by means of writing, they are at least prepared to understand that there are techniques of clarity Moreover, they are able to understand that these techniques have something to do with effectiveness in writing — unless one means by writing a gyring and gimbling in the wabe of literary slithy toves, or unless one believes the excuse offered by frustrated literary midwives namely, the "only-God-can-make-a-tree" theory that effectiveness cannot be taught at all. But this definition of "writing" and this theory of "effectiveness" have practically nothing to do with the kind of writing that involves communication For communication is achieved by virtue of clarity, as this is defined in terms of agreement between writer and reader or among various readers, as to what the writer is referring to The ability to achieve clarity in this sense, and thus communicative effectiveness, is a tree that others besides God can make, at least in a rough fashion

This discussion is not designed to take the place of a textbook for the teaching of effective communicative writings, but it is offered in the hope that a brief statement of a few simple principles upon which such writing is based might serve at least to raise the question as to why these principles are not more adequately taught by English instructors

The first of these principles has already been given in the statement that clearness depends upon, and can be measured in terms of, the degree of agreement between the writer and his readers as to what the words of the writer represent. Simply by striving for a high degree of such agreement, the writer discovers, in some measure, his ingenuity in achieving it. He discovers the usefulness of conditional and quantifying terms, the confusion created by leaving out significantly differentiating details, the degree to which the meaning of a term varies from context to context, and the kinds of differences he must allow for among his reader's habits of interpreting words He learns to rely less on the dictionary and more on the linguistic habits of the people for whom he writes He discovers that literary posing, pleasurable as it may be, usually can be enjoyed only at the expense of effective communication—that Chesterton's paradoxes or Paul de Kruif's chronic astonishment are more titillating than informative. He discovers that there are various levels of abstraction, and that if he goes systematically from lower to higher levels he can use so-called abstract words and still be reasonably clear

Above all, perhaps, he discovers the basic significance of order, or relations, or structure, or organization This matter of structural relationships has wide ramifications, and no writer ever exhausts it, but the student quickly grasps some of its more obvious aspects, if he is striving for agreement between himself and his reader It does not take him long to understand that the organization of what he writes should correspond to the organization of what he is writing about if the reader is to follow him readily. The graduate students with whom I work

frequently have difficulty organizing their descriptions of experimental techniques or procedures, and I have found that it is more helpful to refer to them to a cook-book than to a textbook on composition By examining a cook-book they see at once that the organization of description of procedure is determined simply by the order of the events that make up the procedure. First you do *a* and the *b*, and the *c*, and you write it in that order because you do it in that order This simple principle of order is fundamental in practically all descriptive, narrative, and expository writing, and it is obvious to anyone who is attempting to be considerate of the reader

One might suppose that graduate students would know this, but in spite of the years they have spent in English courses most of them seem not to have learned much about it. The more significant fact is that, as a rule, they learn quite readily to apply this simple principle, once it is clearly explained and demonstrated to them. In this case, certainly, one can make a tree that either God or the English teachers forgot to make

One aspect of organization that seems to have eluded practically all graduate students is that involved in the making of transitions Even those who have been taught how to lay beads in a row have not been taught how to string them Just as the order of what one writes is determined by the order of the parts or events involved in what one is writing about, so the ways in which transitions are made in the writing are determined by the ways in which the parts or events are related in the realities one is describing, narrating, or explaining The ability to move from one sentence or paragraph or chapter to the next, in such a way as to blend them into a unified whole, is largely depended upon an understanding of the reasons for going from one to the next, of why one statement should follow another instead of the reverse, or why one should say, "It follows, them," rather than "But." And these reasons are found in the character of the relations existing among the details of that about which the writing is being done.

This becomes obvious to one who is not trying to write writing, but who is attempting, rather, to write-about-something-for someone.

Another principle underlying communicative writing is that clarity is a prerequisite to validity. It is to be considered that statements that flow beautifully and are grammatically superb may be, also, utterly devoid of factual meaning, or meaningful but vague, or precise but invalid. For writing to be effective, in the sense in which I am using this term, it may or may not be grammatically correct, but it must be both clear and valid. It can be clear without having validity, but if it is unclear its validity cannot well be determined. It must, then, first of all, be clear; it must be that before the question of its validity can even be raised. We ask the writer, "What do you mean?" before we ask, "How do you know?" Until we reach agreement as to precisely what he is writing about, we cannot possibly reach agreement as to whether, or in what degree, his statements are true.

Only to the extent that the various readers of a statement agree as to the specific conditions or observations required for ascertaining its validity can the question of its validity have meaning. And the extent to which the readers of the statement agree on these conditions is, of course, indicative of the extent to which the statement is clear. If a statement is such that its readers do not agree at all as to how it might be verified or refuted, the statement may be "beautiful" or "rich in meaning" or grammatically irreproachable, but it is also, from the point of view of scientific courses such as I am teaching, nonsense It cannot be demonstrated to be valid or invalid, and is meaningful, therefore, to its author, possibly to his English teacher, and perhaps to his psychiatrist

My graduate students have not learned this, either They show this in a particularly disturbing manner when they first attempt to state the topics or problems they propose to investigate in undertaking their theses. They quite characteristically propose problems which preclude the

possibility of clear discussion. They propose questions for investigation for which they desire to obtain precise answers, but which are so stated as to be unanswerable. Apparently they have never been taught that one cannot get a precise answer to a vague question—that the terminology of the question limits the clarity and thus the validity of the answer. Many students are so befuddled on this point that they do not recognize any relation at all between clarity and validity. They actually assume, for example that they can ask, "What causes personality maladjustments?" without specifying what they mean by "causes," or by "personality," or by "maladjustments," or what observations one is to make in order to comply with their definition of "what." Many of them appear to have been taught that to eliminate the vagueness of a question or statement is to destroy its "richness of meaning"—that for a statement to be "full of meaning" it must not mean anything in particular!

Even though they have been so taught, and come, therefore, to the graduate college quite untrained in the writing of valid statements, they can be taught, to a considerable degree, to gauge the validity of what they write. They can be trained to do this by being trained, first, to write clearly For when a statement is made clearly —when there is reasonable agreement among its readers as to what it represents in the realm of fact—its validity can be judged, or a procedure for determining its degree of validity can be devised.

In summary, then, what graduate students, as I know them, have been well taught—and what, in my judgment, their English instructors should have ben able to teach them because the students do learn readily—is the ability to write a clear, organized, unified, and valid document. They have been made familiar with grammar, for the most part, and they have picked up a few tricks of literary flavoring The grammar can be used to advantage ; most of the literary condiments have to be chucked

There appear to be three main reasons for the English instructors' failure The first is that they do not appear to

utilize to any considerable extent the principle of teaching by example. They tell the student how to write and how not to have written, but they don't, as a rule, do any actual writing for him or with him. They show him examples of what has been written, but no examples of something being written

To try to learn to write by reading literature that has already been written and thoroughly jelled, instead of by observing the actual writing of literature, is much like trying to learn to bake a cake by eating one, instead of by watching the baker One should teach by example, and what the teachers of English forget is that there are no examples of writing in the grammar book or the anthology; there are only generalized blueprints of statements yet unwritten and examples of something already written—cakes that were baked yesterday. The teacher herself has to provide the examples of writing to demonstrate the process. She must bake the cake of written English, not merely eat the cake that Hawthorne baked, as she stands before the class

The second, and a more grave, reason for their failure is that they appear to place the emphasis on "writing," rather than on writing-about-something-for-someone. You cannot write writing Or, at least if you do, you are not likely to learn how to write with clarity and validity, because they are not important to one who merely writes writing. Unless the emphasis is placed upon writing as a form of communication and directed very definitely, therefore, to an actual, live reader, the importance of clarity, organization and validity is not likely to become very apparent Their importance becomes obvious, and the means of achieving them suggests themselves more or less readily, the moment one begins seriously to write about—something-for-someone

The third and final point in this "diagnosis" of English instruction is that teachers of English, with apparently only a few exceptions, cling tenaciously to two strange theories The first is that writing is an art, and the second is that it cannot be taught What they seem to mean when

they say that writing is an art is that writing does not have to say anything—except to the reader who has "appreciation"—that writing is at its best when it is a form of expression *qua* expression

In teaching the student to write, if one takes this view of "writing as an art," there is no point—in fact, there is a strong argument to the contrary—in training the student to express himself clearly or with validity. For truth that is "not art" would be of no value, and if art that is clear is regarded as a contradiction in terms (and it seems to be so regarded by some), there would remain only truth that is vague as the ideal of the teachers of English whom we are here discussing. But in communicative writing, truth is never vague, for unless a statement is clear, the degree to which it is true cannot be determined All of which goes far to explain how students can reach the graduate college without learning how to produce effective communicative writing.

The explanation is extended when we recall the other theory, so popular among some teachers of English, that real effectiveness in writing, since it is an "art", cannot be taught at all. Only God can make a tree; the teacher of English can only water the tree with verbal dew in the hope of keeping it green, and even the value of doing that is debatable Teachers frequently boast of having "discovered" a writer, it seems that this in itself is regarded as no mean accomplishment It is also to be noted that writers are sometimes said to have been "influenced" by a teacher But when a teacher has "discovered" a writer and "influenced" him, he cannot further add to what the genes have done, nor detract from what the fates will do Presumably, then, he doesn't try And this pedagogical swooning by the teachers of English, on the theory that you can't make a silk purse out of a sow's ear, results in their making a great many sows' ears out of silk purses. It is not a question of the truth or falsity of their theory that effective writing cannot be taught, although this theory is probably not as largely true as many teachers

of English suppose. The significant point is that the theory makes for unimaginative and lackadaisical teaching. Even God's trees might benefit from some systematic pruning and spraying

My own narrow concern with all this lines in the fact that the ineffectiveness of the English instruction in our schools makes for a serious difficulty in the graduate college in all its branches. But the problem have an importance far more vast than this fact could ever give to it. For the ability of the individual, and of groups of individuals, to use language clearly and with validity is basic to personal efficiency and general development—it is basic to sanity itself—and it is fundamental to intelligent social organization and to the adequate management of national and international problems. The teachers of English in our schools and universities have been and are being entrusted with the heavy responsibility of training the members of our society in the effective communicative use of our language. It is not a responsibility that they can meet appropriately merely by teaching the formalism of grammar, or superciliously disclaim by asserting that effective writing in an art and cannot be taught

Effective writing is a human necessity in anything resembling a democratic culture, and this becomes increasingly true as the culture becomes increasingly complex If the effective use of language cannot be caught, or if it is not to be taught to a far greater extent than it has been, we may well have occasion to despair of the grand experiment dreamed by Voltaire, championed by Washington and Franklin, and cherished by the American people through many generations And if we must despair of that, then truly, even if you do learn to speak correct English, it may well not seem to matter very much "who you talk it to" For when the people cannot adequately speak or write their language, there arise strong men to speak and write it for them— and "at" them

The issues of which I write are by no means to be regarded as academic issues We are a symbolic class of life To

say that we are human is to say, above all and with incalculable significance, that our problems, as individuals, as groups, and as a world culture, are symbolic problems. They are problems that center around the symbols of government, the symbols of finance and general economy, of social status, of power and prestige, of class and race. They are the problems involved in the great institutionalized symbol systems of the Church, the Law, the State. They are problems of meaning, of evaluation, or orientation, processes which, on human levels, are predominantly symbolic in character. It is not the vestige of some forebear's whim that the whole structure of our educational system is founded squarely on the three R's, for reading, writing, and the use of numbers are forms of behaviour in the absence of which *human* society would disintegrate and vanish. The degree to which these forms of behaviour are cultivated and made adequate determines, more than does anything else, the degree to which a symbolic class of life may escape the threat of self-destruction and achieve cultural maturity. Our maladjustment, no less than our genius, as individuals and as groups, lies in our way of responding to and with symbols.

The place of the teacher of English in the structure of a symbolic society is, thus and indeed, not one to be occupied by petulant little men engrossed in verbal "fancy work." It is not too much to say that our possibilities for progress are determined, and limited, by those who instruct us in the use of our language. This view is as disheartening, perhaps, as it is challenging, but the more challenging it is to some, the less disheartening it need be to others.

READABILITY RESEARCH

Be not the first by whom the new are tried.
Nor yet the last to lay the old aside

Alexander Pope

How can you measure the art that is writing?
You cannot.
What then are these yardsticks?
Before we see what they **are,**
we better know what they are **not.**

WHAT THEY ARE NOT

Readability yardsticks (as they are called)
are **not** formulae for effective writing.
They do **not** refer to **all** the aspects of writing
They are **not** a substitute for judgment.

Those who take them as formulae
are likely to turn out dull, standardised writing

WHAT THEY ARE

Those yardsticks refer to one aspect of writing—
its complexity
They are handy statistical tools
to measure complexity in prose.

They are useful to determine whether
writing is gauged to its audience

THE LOGIC

Certain aspects of writing
lend themselves to measurement
and, therefore, to yardsticks.
For example, the length of the sentence,
the structure of the sentence,
and the familiarity or unfamiliarity of the words.

These aspects or factors affect reading difficulty
in different degrees

Readability research has sought and found answers
to a number of questions like these·

How long can sentences be on the average
before they discourage or derail the reader?
How rich a mixture of long, complex, hard, or abstract words
will the average reader tolerate?
What percentage of active verbs, concrete words,
and words referring to people are found in writing
that has proved its acceptance with large audiences?
And, most important of all,
at what level of sentence and word complexity
do readers begin to balk?
What, in other words,
is the danger line of reading difficulty?

FORMULAE OR YARD-STICKS

For about forty years now, scholars have been studying
the effect of writing-style upon reading-difficulty

The first major studies were made in the early thirties
In 1935, William S Gray and Bernics Leary
of Chicago University
came out with a book, *What Makes a Book Readable?*

For a number of reasons, " including its poor readability," (!)
the book did not make an impact

The first impactful studies are those of
Dr. Rudolf Flesch in the early forties
His yardsticks—the Flesch formula—
came to be widely used rightaway
(Incidentally, his writings
are models of clear and persuasive writing)

In 1952, Robert Gunning came up with the book
The Technique of Clear Writing
and in it he gave the Fog Index,
which became a popular yardstick to measure readability.

Others also came up with yardsticks,
notably Edgar Dale and John McElroy.

These yardsticks, in principle, are about the same—
they try to statistically measure the complexity of writing.

They differ in the number of factors taken into account;
some take as many as twenty and others just two.
The factors normally taken up are:
average sentence length in words,
percentage of simple sentences,
percentage of strong verb forms,
portion of familiar words, portion of abstract words,
percentage of personal references and,
percentage of long words.

Fog index, one of the simpler yardsticks,
takes into account the average sentence length
and hard-word percentage,
'hard-word' to mean words of three syllables or more

HOW TO USE THEM

In the words of the innovators themselves,
I have given the way to apply three of the yardsticks.

We may use one of these yardsticks
to see if our writing is in step with writings
that have proved easy to read and understand.

If our writing gives a score of 10 or more on the Fog Index,
we are beyond the 'danger line of reading difficulty';
we may not be easily understood by many people.

In such a case, we better ask ourselves:
Who will be our readers? Should we rewrite?

We have a job to do
and we cannot afford to measure all that we write.
We can apply the yardstick only
to the **more important** communications.

We can also use the yardstick as a **measure of progress.**

What was our score yesterday ?
What is it today ?
What is the score three months from today ?
If there is difference, in the score,
there may be a difference in the effect too.

'May' because there is more to effective writing
than what the factors in the yardsticks suggest
That is why we should bear in mind Gunning's warning:
Use the yardstick as a guide after you have written,
and not as a pattern before you write.
Good writing must be alive ; don't kill it with a system.

THE LIMITATIONS

Let us also be aware of the limitations of these yardsticks.
Let us also hear the other side of the story.

Talking of the over-enthusiasts, Stephen Fitzgerald says,
" they threaten to put our words in a literary straight jacket,
leaving us only the solace of an illusion . . . that
by shortening out sentences,
we have somehow clarified our thoughts . . . .
To strip writing down to the ' lowest level of understanding '
is as though we were to insist on reducing all music
to the primitive rhythm of a jungle beat,
thus hoping to widen the audience."

It has also been observed
that good writing is not mathematical or mechanical.
Ease of reading depends not on sentence length
but on thought.
It is his paucity of ideas
and factual background information
that gives a reader difficulty, not polysyllable words.
Popular magazines are read,
not because the words and sentences are shorter
but rather because the thought is simple.

Anything can be overdone,
and readability formulae are no exception.
If they are overdone, it will no doubt waste
a writer's time, his skill, his strength and creativeness.

The readability yardsticks are not
magic formulae for writing.

The formulae will not create a good writing style
where one did not exist before.
They do not take into account organization, for example.

Clear, concise writing is the result of clear, concise thinking.
There is no substitute.
And some thinking is difficult to grasp.

In view of the obstacles
which every written communication must overcome,
why place another one—namely, hard reading—
in the way of the reader ?
Why not take advantage of readability—
readability to mean 'easy and interesting to read'?
This is where the readability formulae come handy.
They are applied not before writing but after,
to gauge whether the writing is right
to the level of the audience

READABILITY FORMULAE

In a subsequent section are given the yardsticks
as developed by Dr. Rudolf Flesch, (p 214)
Robert Gunning. (p 221) and
Dr. Edgar Dale and Dr. Jeanne S. Chall, (p. 223).
Also given is (p 244) a passage from HG Wells
with scores given by all these three yardsticks (p. 245).
It will be noted they give about the same conclusions.

PRINCIPLES OF WRITING

Arising out of their extensive research,
many authorities have evolved
certain tested guidelines to writing—
three of them are given in the next section.

GUIDELINES TO WRITING

RUDOLF FLESCH'S

Twenty five rules of effective writing:

1. Write about people, things, and facts.
2. Write as you talk.
3. Use contractions.
4. Use the first person.
5. Quote what was said.
6. Quote what was written.
7. Put yourself in the reader's place.
8. Don't hurt the reader's feelings.
9. Forestall misunderstandings.
10. Don't be too brief.
11. Plan a beginning, middle, and end.
12. Go from the rule to the exception, from the familiar to the new.
13. Use short names and abbreviations.
14. Use pronouns rather than repeating nouns.
15. Use verbs rather than nouns.
16. Use the active voice and a personal subject.
17. Use small, round figures.
18. Specify. Use illustrations, cases, examples.
19. Start a new sentence for each new idea.
20. Keep your sentences short.
21. Keep your paragraphs short.
22. Use direct questions.
23. Underline for emphasis.
24. Use parentheses for casual mention.
25. Make your writing interesting *to look at.*

WILLIAM STRUNK, JR.'S

List of 21 Reminders:

1. Place yourself in the background.
2. Write in a way that comes naturally.
3. Work from a suitable design.
4. Write with nouns and verbs.
5. Revise and rewrite.
6. Do not overwrite.
7. Do not overstate.
8. Avoid the use of qualifiers.
9. Do not affect a breezy manner.
10. Use orthodox spelling.
11. Do not explain too much.
12. Do not construct awkward adverbs.
13. Make sure the reader knows who is speaking.
14. Avoid fancy words.
15. Do not use dialect unless your ear is good.
16. Be clear.
17. Do not inject opinion.
18. Use figures of speech sparingly.
19. Do not take shortcuts at the cost of clarity.
20. Avoid foreign languages.
21. Prefer the standard to the offbeat.

ROBERT GUNNING'S*

Ten principles of clear writing:

1. Keep Sentences Short.
2. Prefer the Simple to the Complex.
3. Prefer the Familiar Word.
4. Avoid Unnecessary Words.
5. Put Action in Your Verbs.
6. Write Like You Talk.
7. Use Terms Your Reader Can Picture.
8. Tie In With Your Reader's Experience.
9. Make Full Use of Variety.
10. Write to Express Not Impress.

---

* Please do read the books of Rudolf Flesch (*The Art of Plain Talk*, *The Art of Readable Writing* and *The Art of Clear Thinking*, all published by Harper & Brothers, New York), Robert Gunning (*The Techniques of Clear Writing* published by McGraw-Hill, New York) and William Strunk, Jr (*The Elements of Style* published by The Macmillan Company, New York). If you have not already read this author's *WRITTEN COMMUNICATION AND RESULTS* of which this is a companion volume, please do read it too.

HOW TO USE THE READABILITY FORMULA*

To estimate the readability ("reading ease" and "human interest") of a piece of writing, go through the following steps:

Step 1. Pick your samples.

Unless you want to test a whole piece of writing, take samples. Take enough samples to make a fair test (say, three to five of an article and 25 to 30 of a book). Don't try to pick "good" or "typical" samples Go by a strictly numerical scheme. For instance, take every third paragraph or every other page. (Ordinarily, the introductory paragraphs of a piece of writing are not typical of its style) Each sample should start at the beginning of a paragraph

Step 2. Count the number of words.

Count the words in your piece of writing. If you are using samples, take each sample and count each word in it up to 100. Count contractions and hyphenated words as one word Count numbers and letters as words, too, if separated by spaces For example, count each of the following as one word: 1948, Rs 19892, e g, C O D., wouldn't, week-end

Step 3. Figure the average sentence length.

Figure the average sentence length in words for your piece of writing. If you are using samples, do this for all your samples combined In a 100-word sample, find the sentence that ends nearest to the 100-word mark—that might be at the 94th word or the 109th word Count the sentences up to that point and divide the number of words in those sentences in all your samples by the number of sentences in all your samples In counting sentences, follow the units of thought rather than the punctuation:

* From *The Art of Readable Writing* by Rudolf Flesch Colliers Books, New York, 1965. (C) by Rudolf Flesch Reproduced with permission.

usually sentences are marked off by periods; but sometimes they are marked off by colons or semicolons—like these (There are three sentences here between two periods) But don't break up sentences that are merely joined by conjunctions like *and* or *but*.

Step 4. Count the syllables.

Count the syllables in your 100-word samples and divide the total number of syllables by the number of samples If you are testing a whole piece of writing, divide the total number of syllables by the total number of words and multiply by 100. This will give you the number of syllables per 100 words Count the syllables the way you pronounce the word: e g. *asked* has one syllable, *determined* three, and *pronunciation* five. Count the number of syllables in symbols and figures according to the way they are normally read aloud, e g. two for $ ("dollars") and four for 1916 ("nineteen sixteen"). However, if a passage contains several or lengthy figures, your estimate will be more accurate if you don't include these figures in your syllables count; in a 100-word sample, be sure to add instead a corresponding number of words after the 100-word mark. If in doubt about syllabication rules, use any good dictionary (To save time, count the syllables except the first in all words of more than one syllable; then add the total to the number of words tested. It is also helpful to "read silently aloud" while counting)

Step 5. Count the "personal words".

Count the "personal words" in your 100-word samples and divide the total number of "personal words" by the number of samples If you are testing a whole piece of writing, divide the total number of "personal words" by the total number of words and multiply by 100 This will give you the number of "personal words" per 100 words

"Personal words" are

(a) All first, second and third-person pronouns except the neuter pronouns· *it, its, itself, they, them, their, theirs, themselves* if referring to things rather than people.

(b) All words that have masculine or feminine natural gender, e.g. *John Jones, Mary, father, sister, iceman, actress.* Do not count common-gender words like *teacher, doctor, employee, assistant, spouse.* Count singular and plural forms.

(c) The group words *people* (with the plural verb) and *folks*

Step 6. Count the "personal sentences".

Count the "personal sentences" in your 100-word samples and divide the number of "personal sentences" in all your samples by the number of sentences in all your samples. If you are testing a whole piece of writing, divide the total number of "personal sentences" by the total number of sentences In both cases multiply by 100. This will give you the number of "personal sentences" per 100 sentences.

"Personal sentences" are·

(a) Spoken sentences, marked by quotation marks or otherwise. often including speech tags like "he said", set off by colons or commas (e g *"I doubt it."? "We told him?" "You can take it or leave it." "That's all very well", he replied, showing clearly that he didn't believe a word of what we said*)

(b) Questions, commands, requests, and other sentences directly addressed to the reader (e g *Does this sound impossible?—Imagine what this means—Do this three times.—You shouldn't overrate these results.—This is a point you must remember.—It means lot to people like you and me.*) But don't count sentences that are only indirectly or vaguely addressed to the reader (e.g. This is typical of our national character.—You never can tell)

(c) Exclamations e g. *It's unbelievable!*

(d) Grammatically incomplete sentences whose full meaning has to be inferred from the context (e g. *Doesn't know a word of English—Handsome, though—Well, he wasn't—The minute you walked out.*) If a sentence fits two or more of these definitions, count it only once

Step 7. Find your "reading ease" score.

Using the average sentence length in words (step 3) and the number of syllables per 100 words (step 4) find your "reading ease" score on the *How Easy? chart.*

You can also use this formula:

Multiply the average sentence length by 1 015 .

Multiply the number of syllables per 100 words by 0.846
Add ..

Subtract the sum from 206 835
Your "reading ease" score is . .

The "reading ease" score will put your piece of writing on a scale between 0 (practically unreadable) and 100 (easy for any literate person).

Step 8. Find your "human interest" score.

Using the number of "personal words" per 100 words (step 5) and the number of "personal sentences" per 100 sentences (step 6), find your "human interest" score on *HOW INTERESTING chart*

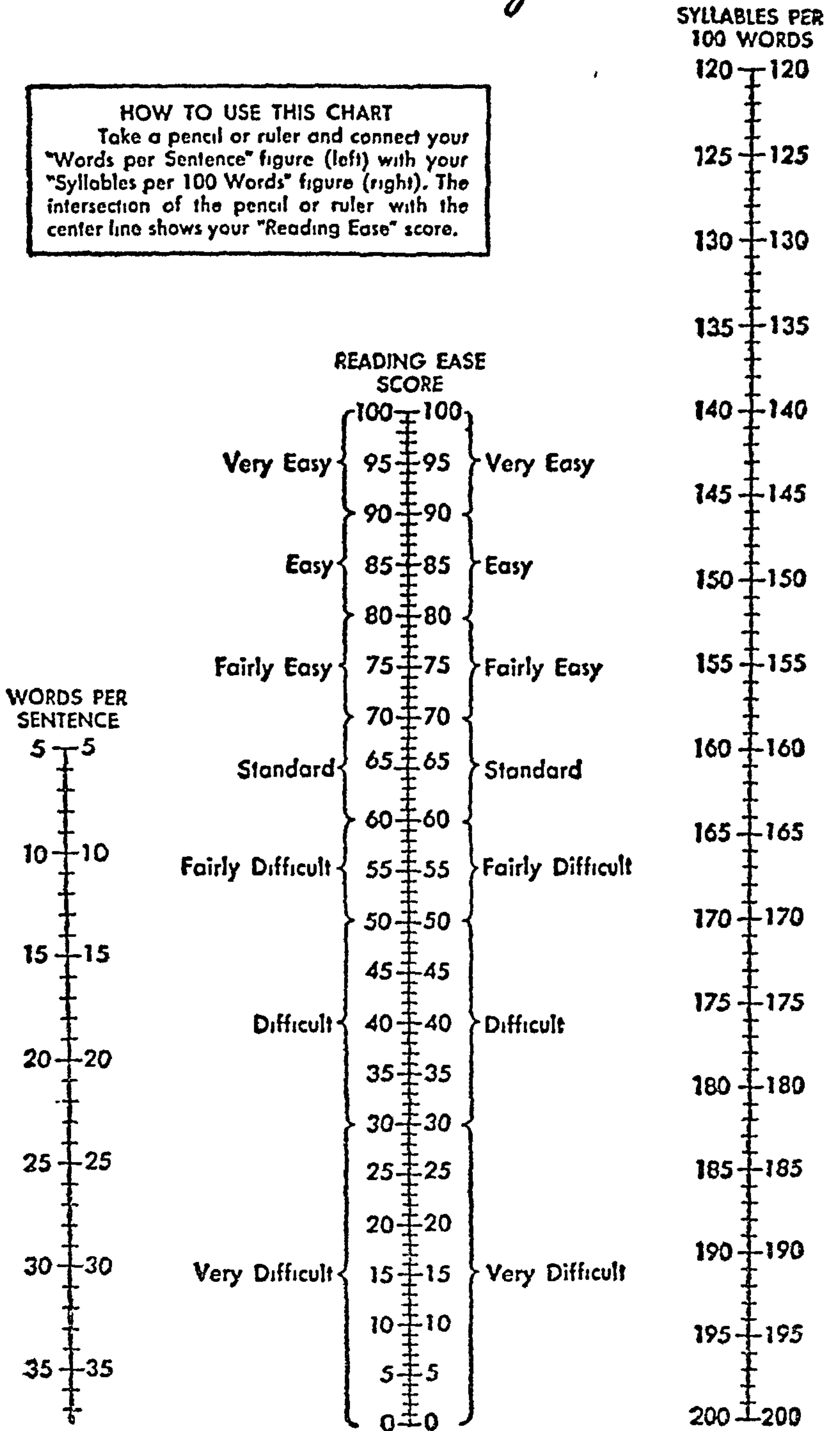
Or use this formula.

Multiply the number of "personal words" per 100 words by 3 635
Multiply the number of "personal sentences" per 100 sentences by 0 314
The total is your "human interest" score.

The "human interest" score will put your piece of writing on a scale between 0 (no human interest) and 100 (full of human interest)

In applying the twin formulas, remember that the "reading ease" formula measures length (the longer the words and sentences the harder to read) and the "human interest" formula measures percentages (the more "personal" words and sentences, the more human interest)

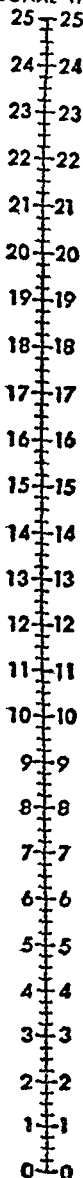
How Easy?

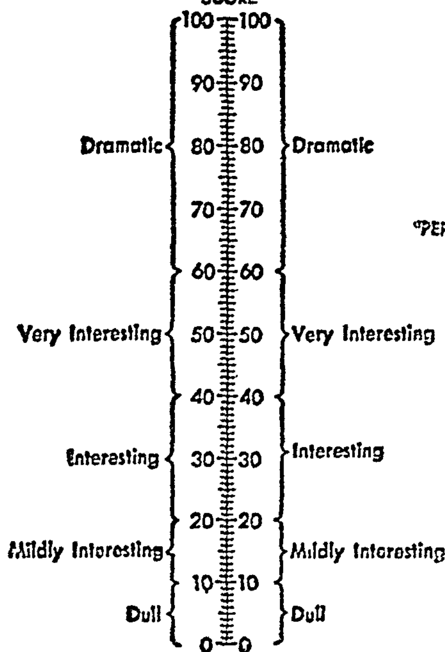

HOW TO USE THIS CHART
Take a pencil or ruler and connect your "Words per Sentence" figure (left) with your "Syllables per 100 Words" figure (right). The intersection of the pencil or ruler with the center line shows your "Reading Ease" score.
WORDS PER SENTENCE
5 10 15 20 25 30 35
READING EASE SCORE
100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0
Very Easy
Easy
Fairly Easy
Standard
Fairly Difficult
Difficult
Very Difficult
SYLLABLES PER 100 WORDS
120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200

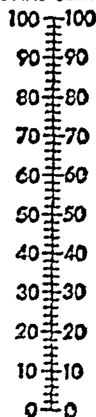
How Interesting?

HOW TO USE THIS CHART

Take a pencil or ruler and connect your "Personal Words" figure (left) with your "Personal Sentences" figure (right). The intersection of the pencil or ruler with the center line shows your "Human Interest" score.







From Psychology by William James:

There is an everlasting struggle in every mind between the tendency to keep unchanged, and the tendency to renovate its ideas. Our education is ceaseless compromise between the conservative and the progressive factors. Every new experience must be disposed of under *some* old head. The great point is to find the head which has to be least altered to take it in Certain Polynesian natives, seeing horses for the first time, called them pigs, that being the nearest head. My child of two played for a week with the first orange that was given him, calling it a "ball" He called the first whole eggs he saw 'potatoes,' having been accustomed to see his "eggs" broken into a glass, and his potatoes without the skin. A folding pocket-corkscrew he unhesitantly called "bad-scissors." Hardly any one of us can make new heads easily when fresh experiences come Most of us grow more and more enslaved to the stock conceptions with which we have once become familiar, and less and less capable of assimilating impressions in any but the old ways. Old-fogyism, in short, is the inevitable terminus to which life sweeps us on.

193 words	18 words per sentence	6% 'personal' words
11 sentences	152 syllables per 100 words	0% 'personal' sentences
12 'personal' words	0 'personal' sentences	
Reading Ease Score: 60		Human Interest Score: 22

Note: William James was famous for his interesting and easy style. This passage, according to the scoring, is "standard" and "interesting"—a rare exception among textbooks Notice the technique of easy explanation: The abstract theme of the passage is expressed in the first four sentences Then follow four sentences giving several concrete examples of two kinds. The abstract generalization is then repeated and summarized in two more sentences Finally, it is rephrased and pointed up with a colloquial touch as 'old-fogyism'.

HOW TO FIND THE FOG INDEX

To find the Fog Index of a passage, take these three simple steps:

One: Jot down the number of words in successive sentences. If the piece is long, you may wish to take several samples of 100 words, spaced evenly through it. If you do, stop the sentence count with the sentence which ends nearest the 100 word total. Divide the total number of words in the passage by the number of sentences. This gives the average sentence length of the passage

Two: Count the number of words of three syllables or more per 100 words. Don't count the words (1) that are proper names, (2) that are combinations of short easy words (like "bookkeeper" and "manpower"), (3) that are verb forms made three syllables by adding —ed or —es (like "created" or "trespasses"). This gives you the percentage of hard words in the passage.

Three: To get the Fog Index, total the two factors just counted and multiply by .4.

Let us apply this yardstick to a few sentences from The Summing Up by W. Somerset Maugham.

> I have never had much patience with the writers who claim from the reader an effort to *understand* their meaning You have only to go to the great *philosophers* to see that it is *possible* to express with *lucidity* the most subtle *reflections* You may find it *difficult* to *understand* the thought of Hume, and if you have no *philosophical* training, its *implications* will doubtless escape you, but no one with any education at all can fail to *understand* exactly what the meaning of each sentence is Few people have written English with more grace than Berkeley. There are two sorts of *obscurity* you will find in writers One is due to *negligence* and the other to *wilfulness*.

---

* From *The Technique of Clear Writing* by Robert Gunning Pp 38-40. McGrawhill, New York, 1968. (C) By Robert Gunning. Reproduced with permission.

The number of words in the sentences of this passage is as follows: 20-33-11-13-20-10-11-10. (Note that the third sentence is actually three complete thoughts linked by a comma, in one instance, and a semicolon in the other. These should be counted as separate sentences.) The total number of words in the passage is 118. This figure divided by 8 (the number of sentences) gives the average sentence length — 14.5 words.

The words of three syllables or more are italicized in the above passage. There are 15 of them or 12.7 per cent.

Adding the average sentence length and percentage of poly-syllables gives 27.2. And this multiplied by .4 results in the Fog Index of 10.9, for this passage.

The following table compares the Fog Index with reading levels by grade and by well known magazines.

	Fog Index	*Reading Level By Grade*	*By Magazine*
	17	College graduate	
	16	„ senior	(No popular magazine this difficult)
	15	„ junior	
	14	„ sophomore	
Danger line	13	„ freshman	
	12	High-school senior	*Atlantic Monthly* and *Harper's*
	11	„ junior	*Time* and *Newsweek*
	10	„ sophomore	Reader's Digest
	9	„ freshman	*Saturday Evening Post*
Easy—	8	Eighth grade	*Ladies Home Journal*
Reading	7	Seventh „	*True Confession* and
Range	7		*Modern Romances*
	6	Sixth „	*Comics*

Fog Index, it will be noticed, is closely related to the years of formal education at school and college.

A FORMULA FOR PREDICTING READABILITY: *

The formula is based on two counts—average sentence length and percentage of unfamiliar words (words outside the Dale list of 3000 words).

The directions follow:

Selecting Samples:

Take approximately 100 words every tenth page for books For articles, select about four 100-word samples per 2,000 words Space these samples evenly. For passages of about 200 to 300 words, analyse the entire passage Never begin or end a sample in the middle of a sentence

Counting the Number of Words:

A. Count the total number of words in the sample.

B Count hyphenated words and contractions as one word.

C Count numbers as words
   10 is one word
   1947 is one word.

D. Count compound names of persons and places as one word
St. John, Van Buren, del Rio, Le Brun, and so on are each counted as one word

E. Do not count initials which are part of a name as separate words
John F W St John is counted as two words.
John and *F W. St John*

Counting the Number of Sentences:

Count the number of complete sentences in the sample

* From *A Formula for Predicting Readability* by Edgar Dale and Jeanne S Chall· Bureau of Educational Research, Ohio State University, 1948 Reproduced with permission

Counting the Number of Unfamiliar Words:

Words which do not appear on the Dale list are considered unfamiliar. Underline all unfamiliar words. even if they appear more than once.

Completing the Work Sheet:

1. The average sentence length is computed by dividing the number of words in the sample by the number of sentences in the sample.
2. The Dale score or percentage of words outside the Dale list is computed by dividing the number of words not on the Dale list by the number of words in the sample, and multiplying by 100.
3. Multiply average sentence length by 0496.
4. Multiply Dale score (2) by 1579
5. Use a constant 3 6395.
6. Add 3, 4 and 5 to get the formula Raw Score.
7. If you have more than one sample to analyze, get an average of the formula raw scores by adding all of these and dividing by the number of samples
8. Convert the average formula raw score to a corrected grade level according to the Correction Table given in Table 1.

Table 1

Correction Table

Formula Raw Score	Corrected Grade-Levels
4 9 and below	4th grade and below
5.0 to 5.9	5—6th grade
6 0 to 6 9	7—8th grade
7.0 to 7.9	9—10th grade
8.0 to 8.9	11—12th grade
9 0 to 9.9	13—15th grade (college)
10 0 and above	16+ (college graduate)

9. Please see accompanying illustration.

AN ILLUSTRATION

The following three samples were chosen from a 15-page pamphlet, *Your Baby,* published by the National Tuberculosis Association. The words in *italics* were not found in the Dale list and are by definition unfamiliar words.

Sample I·

A happy, useful life—that's what you want for baby, isn't it? And because a healthy mind and body are so *necessary* to happiness and long life, you must do all you can to get your baby off to a good start. There is much you can do while he is still a baby to lay the *foundation* for good health and good health habits

Many things *affect* your baby's health. One was the state of your own health during *pregnancy,* and the *special* care your doctor gave you before the baby was born. Other things important to your child's health are food, clothes, baths, sleep, and habit training A baby needs a clean, happy place to live, and he must be kept from having any sickness that can be *prevented*

Sample II.

Diphtheria used to kill many babies Today no child need die of *diphtheria.* It is one of the diseases for which we have very good *treatment* and almost sure *prevention* But your baby will not be safe from this disease unless he has been protected by *immunization*

The way to protect your baby is simple. *Physicians usually* give *injections* of three *doses* of *toxoid,* three to four weeks apart, generally beginning when a baby is about six months old Your doctor will tell you that your baby should have this *protection* before his first birthday.

Six months after the last *injection* of *toxoid,* the *physician* may test your baby to see if another *dose* of *toxoid is necessary.* Before the child enters school an extra shot of *toxoid* is often given

Sample III:

The *germs* that cause *tuberculosis* can enter the baby's body through his mouth or be breathed in through his nose. These *germs* come to him on *spray* or *moisture* which the person with *active tuberculosis* breathes or coughs out *Germ-filled spray* from the mouth or nose may light on the baby's food, his dishes, his toys The baby's hands may carry *germs* from soiled *objects* to his mouth Kissing is one way of spreading TB as well as other *germs*

16

Tuberculosis of the bones or *joints* or of certain organs of the body besides the *lungs* can come to the bottle-fed baby in milk which has not been *pasteurized* or boiled.

The records for these three samples are given in the work sheet (Table II)[a] The average raw score for the three samples was 6.35. By referring to the grade equivalent given in Table I, the correction table, the grade-level of the readability of the pamphlet 7—8, was determined.

---

[a] See page 227.

TABLE II

A Work Sheet Filled In For The Samples Taken From The Pamphlet "Your Baby"

Article Your Baby	Page No. 2	Page No. 7	Page No. 12
Author	From "A happy	From "Diptheria	From "the germs
Publisher Nat'l TB Assoc Date . 1945	To . prevented"	To .. often given"	To .. or boiled ,'
1 Number of words in the sample . .	132	131	111
2 Number of sentences in the sample ..	7	9	6
3 Number of words not on Dale List	6	20	17
4 Average sentence length (divide 1 by 2) . ..	19	15	19
5. Dale score (divide 3 by 1, multiple by 100)	5	15	15
6 Multiply average sentences length (4) by 0496	9424	7440	9424
7 Multiple Dale score (5) by .1579 .. .	7895	2 3685	2 3685
8 Constant	3 6365	3 6365	3 6365
9 Formula raw score (add 6, 7 and 8) .	5 3684	6.7490	6.9174

Average raw score of 3 sample	6 35	Analyzed by	J. S C	Date 1-28-48
Average corrected grade-level	7-8	Checked by	C. D. C.	Date 1-28-84

DALE LIST

a
able
aboard
about
above
absent
accept
accident
account
ache(ing)
acorn
acre
across
act(s)
add
address
admire
adventure
afar
afraid
after
afternoon
afterward(s)
again
against
age
aged
ago
agree
ah
ahead
aid
aim
air
airfield
airplane
airport
airship
airy
alarm
alike
alive
all
alley
alligator
allow
almost
alone
along
aloud
already
also
always
am
America
American
among
amount
an
and
angel
anger
angry
animal
another
answer
ant
any
anybody
anyhow
anyone
anything
anyway
anywhere
apart
apartment
ape
apiece
appear
apple
April
apron
are
aren't
arise
arithmetic
arm
armful
army
arose
around
arrange
arrive(d)
arrow
art
artist
as
ash(es)
aside
ask
asleep
at
ate
attack
attend
attention
August
aunt
author
auto
automobile
autumn
avenue
awake(n)
away
awful(ly)
awhile
ax

baa
babe
baby(ies)
back
background
backward(s)
bacon
bad(ly)
badge
bag
bake(r)
bakery
baking
ball
balloon
banana
band
bandage
bang
banjo
bank(er)
bar
barber
bare(ly)
barefoot
bark
barn
barrel
base

baseball
basement
basket
bat
batch
bath
bathe
bathing
bathroom
bathtub
battle
battleship
bay
be(ing)
beach
bead
beam
bean
bear
beard
beast
beat(ing)
beautiful
beautify
beauty
became
because
become
becoming
bed
bedbug
bedroom
bedspread
bedtime
bee
beech
beef
beefsteak
beehive
been
beer
beet
before
beg
began
beggar

begged
begin
beginning
begun
behave
behind
believe
bell
belong
below
belt
bench
bend
beneath
bent
berry(ies)
beside(s)
best
bet
better
between
bib
bible
bicycle
big(ger)
bid
bill
billboard
bin
bind
bird
birth
birthday
biscuit
bit
bite
biting
bitter
black
blackberry
blackbird
blackboard
blackness
blacksmith
blame
blank

blanket
blast
blaze
bleed
bless
blessing
blew
blind(s)
blindfold
block
blood
bloom
blossom
blot
blow
blue
blueberry
bluebird
bluejay
blush
board
boast
boat
bob
bobwhite
body(ies)
boil(er)
bold
bone
bonnet
boo
book
bookcase
bookkeeper
boom
boot
born
borrow
boss
both
bother
bottle
bottom
bought
bounce
bow

bowl
bow-wow
box(es)
boxcar
boxer
boy
boyhood
bracelet
brain
brake
bran
branch
brass
brave
bread
break
breakfast
breast
breath
breathe
breeze
brick
bride
bridge
bright
brightness
bring
broad
broadcast
broke(n)
brook
broom
brother
brought
brown
brush
bubble
bucket
buckle
bud
buffalo
bug
buggy
build
building
built

cocoon
codfish
coffee
coffeepot
coin
cold
collar
college
color(ed)
colt
column
comb
come
comfort
comic
coming
company
compare
conductor
cone
connect
coo
cook(ed)
cook(ing)
cooky(ie) (s)
cool(er)
coop
copper
copy
cord
cork
corn
corner
correct
cost
cot
cottage
cotton
couch
cough
could
couldn't
count
counter
country
county
course
court
cousin
cover
cow
coword(ly)
cowboy
cozy
crab
crack
cracker
cradle
cramps
cranberry
crank(y)
crash
crawl
crazy
cream(y)
creek
creep
crept
cried
croak
crook(ed)
crop
cross(ing)
cross-eyed
crow
crowd(ed)
crown
cruel
crumb
crumble
crush
crust
cry(ies)
cub
cuff
cup
cupboard
cupful
cure
curl(y)
curtain
curve
cushion
custard
customer
cut
cute

dad
daddy
daily
dairy
daisy
dam
damage
dame
damp
dance(r)
dancing
dandy
danger(ous)
dare
dark(ness)
darling
darn
dart
dash
date
daughter
dawn
day
daybreak
daytime
dead
deaf
deal
dear
death
December
decide
deck
deed
deep
deer
defeat
defend
defense
delight
den
dentist
depend
dump
deposit
deposit
describe
desert
deserve
desire
desk
destroy
devil
dew
diamond
did
didn't
die(d)(s)
difference
different
dig
dim
dime
dine
ding-dong
dinner
dip
direct
direction
dirt(y)
discover
dish
dislike
dismiss
ditch
dive
diver
divide
do
dock
doctor
does
doesn't
dog
doll
dollar

finger
finish
fire
firearm
firecracker
fireplace
fireworks
firing
first
fish
fisherman
fist
fit(s)
five
fix
flag
flake
flame
flap
flash
flashlight
flat
flea
flesh
flew
flies
flight
flip
flip-flop
float
flock
flood
floor
flop
flour
flow
flower(y)
flutter
fly
foam
fog
foggy
fold
folks
follow(ing)
fond

food
fool
foolish
foot
football
footprint
for
forehead
forest
forget
forgive
forgot(ten)
fork
form
fort
forth
fortune
forty
forward
fought
found
fountain
four
fourteen
fourth
fox
frame
free
freedom
freeze
freight
French
fresh
fret
Friday
fried
friend(ly)
friendship
frighten
frog
from
front
frost
frown
froze
fruit

fry
fudge
fuel
full(y)
fun
funny
fur
furniture
further
fuzzy

gain
gallon
gallop
game
gang
garage
garbage
garden
gas
gasoline
gate
gather
gave
gay
gear
geese
general
gentle
gentleman
gentlemen
geography
get
getting
giant
gift
gingerbread
girl
give(n)
giving
glad(ly)
glance
glass(es)
gleam
glide
glory

glove
glow
glue
go(ing)
goes
goal
goat
gobble
God
godmother
gold(en)
goldfish
golf
gone
good(s)
good-by(gye)
good-looking
goodness
goody
goose
gooseberry
govern
government
gown
grab
gracious
grade
grain
grand
grandchild
grandchildren
grand-
daughter
grandfather
grandma
grandmother
grandpa
grandson
grandstand
grape(s)
grapefruit
grass
grasshopper
grateful
grave
gravel

hush
hut
hymn

I
ice
icy
I'd
idea
ideal
if
ill
I'll
I'm
important
impossible
improve
in
inch(es)
income
indeed
Indian
indoors
ink
inn
insect
inside
instant
instead
insult
intend
interested
interesting
into
invite
iron
is
island
isn't
it
its
it's
itself
I've
ivory
ivy

jacket
jacks
jail
jam
January
jar
jaw
jay
jelly
jellyfish
jerk
jig
job
jockey
join
joke
joking
jolly
journey
joy(ful)
joyous
judge
jug
juice
juicy
July
jump
June
junior
junk
just

keen
keep
kept
kettle
key
kick
kid
kill(ed)
kind(ly)
kindness
king
kingdom
kiss
kitchen
kite
kitten
kitty
knee
kneel
knew
knife
knit
knives
knob
knock
knot
know
known

lace
lad
ladder
ladies
lady
laid
lake
lamb
lame
lamp
land
lane
language
lantern
lap
lard
large
lash
lass
last
late
laugh
laundry
law
lawn
lay
lawyer
lazy
lead
leader
leaf
leak
lean
leap
learn(ed)
least
leather
leave(ing)
led
left
leg
lemon
lemonad
lend
length
less
lesson
let
let's
letter
letting
lettuce
level
liberty
library
lice
lick
lid
lie
life
lift
light(nes
lightnin
like
likely
liking
lily
limb
lime
limp
line
linen
lion
lip
list
listen
lit

nerve
nest
net
never
nevermore
new
newspaper
next
nibble
nice
nickel
night
nightgown
nine
nineteen
ninety
no
nobody
nod
noise
noisy
none
noon
nor
north(ern)
nose
not
note
nothing
notice
November
now
nowhere
number
nurse
nut

oak
oar
oatmeal
oats
obey
ocean
o'clock
October
odd
of
off
offer
office
officer
often
old
old-fashioned
on
once
one
onion
only
onward
open
or
orange
orchard
order
ore
organ
other
otherwise
ouch
our(s)
ourselves
out
outdoor
outfit
outlaw
outline
outside
outward
oven
over
overalls
overcoat
overeat
overhead
overhear
overnight
overturn
owe
owing
owl
own(er)
ox
pa
pace
pack
package
pad
page
paid
pain(ful)
paint(er)
painting
pair
pal
palace
pale
pan
pancake
pane
pansy
pants
papa
paper
parade
pardon
parent
park
part(ly)
partner
party
pass
passenger
past
paste
pasture
pat
patch
path
patter
pave
pavement
paw
pay
payment
pea(s)
peace(ful)
peach(es)
peak
peanut
pear
pearl
peck
peek
peel
peep
peg
pen
penny
people
pepper
peppermint
perfume
perhaps
person
pet
phone
piano
pick
pickle
picnic
picture
pie
piece
pig
pigeon
piggy
pile
pill
pillow
pin
pine
pineapple
pink
pint
pipe
pistol
pit
pitch
pitcher
pity
place
plain
plan

plane
plant
plate
platform
platter
play(er)
playground
playhouse
playmate
plaything
pleasant
please
plenty
plow
plug
plum
pocket
pocketbook
poem
point
poison
poke
pole
police
policeman
polish
polite
pond
ponies
pony
pool
poor
pop
popcorn
popped
porch
pork
possible
post
postage
postman
pot
potato(es)
pound
pour
powder

power(ful)
praise
pray
prayer
prepare
prepare
present
pretty
price
prick
prince
princess
print
prison
prize
proper
protect
proud
prove
prune
public
puddle
puff
pull
pump
pumpkin
punch
punish
pup
pupil
puppy
pure
purple
purse
push
puss
pussy
pussycat
put
putting
puzzle

quack
quart
quarter
queen

queer
question
quick(ly)
quiet
quilt
quit
quite

rabbit
race
rack
radio
radish
rag
rail
railroad
railway
rain(y)
rainbow
raise
raisin
rake
ram
ran
ranch
rang
rap
rapidly
rat
rate
rather
rattle
raw
ray
reach
read
reader
reading
ready
real
really
rear
reason
rebuild
receive
recess

record
red
redbird
redbreast
refuse
reindeer
rejoice
remain
remember
remind
remove
rent
repair
repay
repeat
report
rest
return
review
reward
rib
ribbon
rice
rich
rid
riddle
ride(r)
riding
right
rim
ring
rip
ripe
rise
rising
river
road
roadside
roar
roast
rob
robber
robe
robin
rock(y)
rocket

rode
roll
roller
roof
room
rooster
root
rope
rose
rosebud
rot
rotten
rough
round
route
row
rowboat
royal
rub
rubbed
rubber
rubbish
rug
rule(r)
rumble
run
rung
runner
running
rush
rust(y)
rye

sack
sad
saddle
sadness
safe
safety
said
sail
sailboat
sailor
saint
salad
sale
salt
same
sand(y)
sandwich
savage
Saturday
sausage
sank
sang
sap
sash
sat
satisfactory
satin
save
savings
saw
say
scab
scales
scare
scarf
school
schoolboy
schoolhouse
schoolmaster
schoolroom
scorch
score
scrap
scrape
scratch
scream
screen
screw
scrub
sea
seal
seam
search
season
seat
second
secret
see(ing)
seed
seek
seem
seen
seesaw
select
self
selfish
sell
send
sense
sent
sentence
separate
September
servant
serve
service
set
setting
settle
settlement
seven
seventeen
seventh
seventy
several
sew
shade
shadow
shady
shake(r)
shaking
shall
shame
shan't
shape
share
sharp
shave
she
she'd
she'll
she's
shear(s)
shed
sheep
sheet
shelf
shell
shepherd
shine
shining
shiny
shirt
shock
shoe
shoemaker
shone
shook
shoot
shop
shopping
shore
short
shot
should
shoulder
should'nt
shout
shovel
show
shower
shut
shy
sick(ness)
side
sidewalk
sideways
sigh
sight
sign
silence
silent
silk
sill
silly
silver
simple
sin
since
sing
singer

single
sink
sip
sir
sis
sissy
sister
sit
sitting
six
sixteen
sixth
sixty
size
skate
skater
ski
skin
skip
skirt
sky
slam
slap
slate
slave
sled
sleep(y)
sleeve
sleigh
slept
slice
slid
slide
sling
slip
slipped
slipper
slippery
slit
slow(ly)
sly
smack
small
smart
smell
smile

smoke
smooth
snail
snake
snap
snapping
sneeze
snow(y)
snowball
snowflake
snuff
snug
so
soak
soap
sob
socks
sod
soda
sofa
soft
soil
sold
soldier
sole
some
somebody
somehow
someone
something
sometime(s)
somewhere
son
song
soon
sore
sorrow
sorry
sort
soul
sound
soup
sour
south(ern)
space
spade

spank
sparrow
speak(er)
spear
speech
speed
spell(ing)
spend
spent
spider
spike
spill
spin
spinach
spirit
spit
splash
spoil
spoke
spook
spoon
sport
spot
spread
spring
springtime
sprinkle
square
squash
squeak
squeeze
squirrel
stable
stack
stage
stair
stall
stamp
stand
star
stare
start
starve
state
station
stay

steak
steal
steam
steamboat
steamer
steel
steep
steeple
steer
stem
step
stepping
stick(y)
stiff
still(ness)
sting
stir
stitch
stock
stocking
stole
stone
stood
stool
stoop
stop
stopped
stopping
store
stork
stories
storm(y)
story
stove
straight
strange(r)
strap
straw
strawberry
stream
street
stretch
string
strip
stripes
strong

stuck
study
stuff
stump
stung
subject
such
suck
sudden
suffer
sugar
suit
sum
summer
sun
Sunday
sunflower
sung
sunk
sunlight
sunny
sunrise
sunset
sunshine
supper
suppose
sure(ly)
surface
surprise
swallow
swam
swamp
swan
swat
swear
sweat
sweater
sweep
sweet(ness)
sweetheart
swell
swept
swift
swim
swimming
swing

switch
sword
swore

table
tablecloth
tablespoon
tablet
tack
tag
tail
tailor
take(n)
taking
tale
talk(er)
tall
tame
tan
tank
tap
tape
tar
tardy
task
taste
taught
tax
tea
teach(er)
team
tear
tease
teaspoon
teeth
telephone
tell
temper
ten
tennis
tent
term
terrible
test
than
thank(s)

thankful
Thanks-giving
that
that's
the
theater
thee
their
them
then
there
these
they
they'd
they'll
they're
they've
thick
thief
thimble
thin
thing
think
third
thirsty
thirteen
thirty
this
tho
thorn
those
though
thought
thousand
thread
three
threw
throat
throne
through
throw(n)
thumb
thunder
Thursday
thy
tick

ticket
tickle
tie
tiger
tight
till
time
tin
tinkle
tiny
tip
tiptoe
tire
tired
'tis
title
to
toad
toadstool
toast
tobacco
today
toe
together
toilet
told
tomato
tomorrow
ton
tone
tongue
tonight
too
took
tool
toot
tooth
toothbrush
thoothpick
top
tore
torn
toss
touch
tow
toward(s)

towel
tower
town
toy
trace
track
trade
train
tramp
trap
tray
treasure
treat
tree
trick
tricycle
tried
trim
trip
trolley
trouble
truck
true
truly
trunk
trust
truth
try
tub
Tuesday
tug
tulip
tumble
tune
tunnel
turkey
turn
turtle
twelve
twenty
twice
twig
twin
two

ugly
umbrella
uncle
under
understand
underwear
undress
unfair
unfinished
unfold
unfriendly
unhappy
unhurt
uniform
united
unkind
unknown
unless
unpleasant
until
unwilling
up
upon
upper
upset
upside
upstairs
uptown
upward
us
use(d)
useful

valentine
valley
valuable
value
vase
vegetable
velvet
very
vessel
victory
view
village
vine
violet
visit
visitor
voice
vote

wag
wagon
waist
wait
wake(n)
walk
wall
walnut
want
war
warm
warn
was
wash(er)
washtub
wasn't
waste
watch
watchman
water
watermelon
waterproof
wave
wax
way
wayside
we
weak(ness)
weaken
wealth
weapon
wear
weary
weather
weave
web
we'd
wedding
Wednesday
wee
weed
week
we'll
weep
weigh
welcome
well
went
were
we're
west(ern)
wet
we've
whale
what
what's
wheat
wheel
when
whenever
where
which
while
whip
whipped
whirl
whisky
whisper
whistle
white
who
who'd
whole
who'll
whom
who's
whose
why
wicked
wide
wife
wiggle
wild
wildcat
will
willing
willow

win
wind(y)
windmill
window
wine
wing
wink
winner
winter
wipe
wire
wise
wish
wit
witch
with
without
woke
wolf
woman

women
won
wonder
wonderful
won't
wood(en)
woodpecker
woods
wool
woollen
word
wore
work(er)
workman
world
worm
worn
worry
worse
worst

worth
would
wouldn't
wound
wove
wrap
wrapped
wreck
wren
wring
write
writing
written
wrong
wrote
wrung

yard
yarn
year

yell
yellow
yes
yesterday
yet
yolk
yonder
you
you'd
you'll
young
youngster
your(s)
you're
yourself
yourselves
youth
you're

All three yardsticks applied*

The present writer is sixty-five. When he was a little boy his mother taught him out of a book she valued very highly, *Magnell's Questions.* It had been her own school book. It was already old-fashioned, but it was still in use and on sale. It was a book on the eighteenth-century plan of question and answer, and it taught that here were four elements, earth, air, fire and water.

These four elements are as old at least as Aristotle. It never occurred to me in my white-sock and plaid-petticoat days to ask in what proportion these fundamental ingredients were mixed in myself or the tablecloth or my bread and milk, I just swallowed them as I swallowed the bread and milk.

From Aristotle I made a stride to the eighteenth century. The two elements of the Arabian alchemists, sulphur and mercury, I never heard of then, nor of Paracelsus and his universe of salt, sulphur, mercury, water, and the vital elixir. None of that ever got through to me, I went to a boy's school. and there I learnt, straightway, that I was made up of hard, definite molecules, built up of hard definite indestructible atoms of carbon, oxygen. hydrogen, nitrogen, phosphorus, calcium, sodium, chlorine, and a few others. These were the real elements. They were shown plainly in my textbook like peas or common balls suitably grouped. That also I accepted for a time without making any fuss about it. I do not remember parting with the Four Elements: they got lost and I went on with the new lot.

At another school. and then at the Royal College of Science I learnt of a simple eternity of atoms and force But the atoms now began to be less solid and simple. We talked very much of ether and protyle at the Royal College. but protons and electrons were still to come, and atoms,

* From Wells, H. G, *Science and Ultimate Truth* in *Great Essays in Science,* Washington Square Press. New York, 1957.

though taking on strange shapes and movements, were intact. Atoms could neither be transformed nor destroyed, but forces, though they could not be destroyed, could be transformed. This indestructibility of the chameleon of force, was the celebrated Conservation of Energy, which has since lost prestige, though it remains as a sound working generalization for the everyday engineer.

But in those days, when I debated and philosophized with my fellow students, I was speedily made aware that these atoms and molecules were not realities at all; they were, it was explained to me, essentially mnemonics, they satisfied, in the simplest possible arrangement of material models and images, what was needed to assemble and reconcile the known phenomena of matter. That was all they were. That I grasped without much difficulty. There was no shock to me, therefore, when presently new observations necessitated fresh elaborations of the model. My schoolmaster had been a little too crude in his instructions. He had not been a scientific man, but only a teacher of science He had been an unredeemed Realist, teaching science in a dogmatic Realist way Science, I now understood, never contradicts herself absolutely, but she is always busy in revising her classifications and touching up and rephrasing her earlier cruder statements. Science never professes to present more than a working diagram of fact. She does not *explain,* she *states the relations and associations of facts as simply as possible.*

Her justification for her diagrams lies in her increasing power to change matter. The test of all her theories is that they work. She has always been true, and continually she becomes truer. But she never expects to reach Ultimate Truth. At their truest her theories are not, and never pretend to be, more than diagrams to fit, not even all possible facts, but simply the known facts.

READABILITY SCORES

Flesch Formula	*Gunning's Formula*	*Dale-Chall Formula*
Reading ease score 77	Fog index. 9	Raw Score
Human interest score: 34		
Grade· **Fairly interesting**	Grade: 9	Grade· **7-8th grade**

Suggestions for Further Reading

BUSINESS REPORT WRITING

AUTHOR (S)	TITLE	PUBLISHERS	YEAR
American Management Association	Reports to Top Management for Effective Planning and Control	A M A, New York	1953
Anderson, C. R., Saunders, A G and Weeks, Francis William	Business Reports: Investigation and Presentation	McGraw Hill, New York	1957
Babenroth, A. C.	Modern Business Communication	Prentice Hall Inc., Englewood Cliffs	1957
Babenroth, A. C and Parkhurst, C C.	Modern Business English	Prentice Hall Inc, Englewood Cliffs	1955
Boyd, W. P.	Productive Business Writing	Prentice Hall Inc, Englewood Cliffs	1959
Biomage, W C.	Writing for Business	G. Wahr & Co, Ann Arbor	1964
Ball, John and Williams, Cecil B	Report Writing	The Ronald Press Co., New York	1955
Baker, Ray P, and Howell, Almond C.	The Preparation of Reports	The Ronald Press Co, New York	1938
Brown, Leland	Communicating Facts and Ideas in Business	Prentice Hall, Englewood Cliffs	1961

AUTHOR (S)	TITLE	PUBLISHERS	YEAR
Brown, Leland	Effective Business Report Writing	Prentice Hall, Englewood Cliffs	1955
Brown, S. M. and Doris, Lillian	Business Executive Hand Book	Prentice Hall Inc., Englewood Cliffs	1953
Chandler, Charles and others	English for Business	Prentice Hall Inc., Englewood Cliffs	1963
ollins, V H	The Choice of Words	Longmans, London	1952
Devlin, Frank J.	Business Communication	Richard D. Irwin, Homewood	1968
Douglas, P. F	Communication Through Reports	Prentice Hall, Englewood Cliffs	1957
Evans, Sir Ifor	The Use of English	Staple Press, London	1949
Fraily and Schnell	Practical Business Writing	Prentice Hall, Englewood Cliffs	1952
Gallagher, William J	Report Writing for Management	Addison Wesley Publishing Company, Reading	1969
Gartside, L.	Modern Business Correspondence	The English Language Book Society and Macdonald & Evans Ltd., London	1967
Gaum, Carl G and others	Report Writing	Prentice Hall Inc , Englewood Cliffs	1959

AUTHOR (S)	TITLE	PUBLISHERS	YEAR
Graves, Harold F. and Hoffman, S S.	Report Writing	Prentice Hall, Englewood Cliffs	1965
Guthrei, L O.	Factual Communication	The Macmillan Company, New York	1957
Harold, Janis J.	Business Communication Reader	Harper & Row, New York	1958
Hay, Robert & Lesikar, Raymond V.	Business Report Writing	Richard D.Irwin Inc, Homewood	1957
Harold, Janis J. and others	Business Writing	Barns and Noble. New York	1956
Himmstreet, William C. and others	Business Communication	Wadsworth Publishing, New York	1969
Hunter, Laura, Grace	The Language of Audit Reports	U S Government Printing Office, Washington	1957
Jefferies, K S.	Presenting O & M Recommendations	International Institute of Administrative Sciences, Brussels	1960
Jud, William	Good English in Business	West Publishing Corpn., Pvt Ltd., Sydney	1963
Kerekes, Frank and Winfrey, Robley	Report Preparation	The Iowa State College Press, Ames	1951
Lesikar, Raymond V.	Report Writing for Business	Richard D. Irwin, Homewood	1969

AUTHOR (S)	TITLE	PUBLISHERS	YEAR
Linton, Calvin D	How to Write Reports	Harper & Row, New York	1954
Manley, M.	Business Information—How to find it and use it	Harper & Row, New York	1955
Mandel, S	Writing in Industry	Putnam & Sons, New York	1960
Menning, J. H and Wilkinson, C. W.	Communicating Through Letters and Reports	Richard D Irwin, Homewood	1963
Rantenstrauch, Walter	Industrial Surveys and Reports	John Waley & Sons, New York	1940
Robinson, David M.	Writing Reports for Management Decisions	Charles E. Merrill Publishing Co, Columbus	1969
Sanders, Thomas H	Company Annual Reports	Harvard University Press, Boston	1949
Santmyers, S S.	Practical Report Writing	International Text Book Company, Sconton	1950
Schutle, W M	Communications in Business and Industry	Holt, New York	1960
Shurter, Robert L. and others	Business Research & Report Writing	McGraw Hill, New York	1965
Sklare, Arnold B	Creative Report Writing	McGraw Hill, New York	1964

AUTHOR (S)	TITLE	PUBLISHERS	YEAR
Sigband, N. B	Effective Report Writing for Business	Harper & Row, New York	1960
Stron G., Earl P. and Weaver, Robert G	Writing for Business and Industry	Allen and Bacon, New York	1962
Tuttle, Robert E. and Brown, C. A.	Writing Useful Reports	Appleton-Century Crofts, New York	1956
Vangagn, Charles E.	Report Writers' Hand Book	Prentice Hall, Englewood Cliffs	1961
Waldo, Willis H.	Better Report Writing	Reinhold Publishing Corp., New York	1957
Wells, Walter	Communication in Business	Wadsworth Publishing Co., New York	1968
Wesecir, Maurice H.	Words Confused and Misused	Pitman, London	1952
Whitter, W and Whitteker F.	Good and Bad English	Newnes, London	1950
Whilliams, C. B. and Ball, J.	Report Writing	Ronald, New York	1955
Wilkison, C. W. and others	Writing for Business	Richard D. Irwin, Homewood	1960
Wyke, Lionel D.	Preparing Effective Reports	Odyssey, New York	1962
Zetler, R. L and Crouch, W. G.	Successful Communication in Science and Industry, Writing, Reading and Speaking	McGraw Hill, New York	1961

TECHNICAL REPORT WRITING

AUTHOR (S)	TITLE	PUBLISHERS	YEAR
Baker, C	Technical Publications, their Purpose, Preparation and Production	Chapman & Hall, London	1955
Baker, J C Y	A Guide to Technical Writing	Pitman, London	1961
Bleckle, M B and Hoop, K W	Reports for Science and Industry	Holt, Rinehart & Winston, New York	1958
Chatterjee, T K	Principles & Practice of Technical Reporting	Kitab Ghar, Gwalior	1966
Chisholm, Cecil	Communications in Industry	Batsfold Business Publications, London	1957
Clarke, Emerson	A Guide to Technical Literature Production	TW Publishers, River Forest	1961
Comer, D B and Spillman, R R	Modern Technical & Industrial Reports	G P Putnam & Sons, New York	1962
Cooper, Bruce M	Writing Technical Reports	Pelican, London	1964
Cordasco, F and Gatner, E S M.	Research & Report Writings	Barnes & Noble, New York	1948
Crouch and Zeitler	A Guide to Technical Writing	The Ronald Press Co., New York	1948

AUTHOR (S)	TITLE	PUBLISHERS	YEAR
Dodds, Roberts H.	Writing for Technical & Business Magazines	John Wiley & Sons, New York	1969
Estrin, H A. (Ed)	Technical & Professional Writing: A practical Anthology	Harcourt, Brace & World Inc., New York	1963
Godfrey, J. W and Parr, G	The Technical Writer An aid to the Presentation and Production of Technical Literature	John Wiley & Sons, New York	1959
Hicks, Tyler G.	Successful Technical Writing: Technical Articles, paper, reports etc.	McGraw Hill, New York	1959
Kapp, Reginol O	The Presentation of Technical Information	Constable & Co, London	1948
Mills, G. H. and Walter, John A.	Technical Writing	Holt, Rinehart & Winston, New York	1959
Nelson, R J.	Technical Report Writing	McGraw Hill, New York	1952
Paul, Jones W	Writing Scientific Papers & Reports	William C Brown Co., New York	1946
Pearsall, Thomas E.	Audience Analysis for Technical Writing	Glencoe Press, Beverly Hills, California	1969

AUTHOR (S)	TITLE	PUBLISHERS	YEAR
Rathbone, Robert R. and Stone, J. B.	Writer's Guide for Engineers and Scientists	Prentice Hall, Englewood Cliffs	1962
Rhodes, F. H. and Johnson, J. F.	Technical Report Writing	McGraw Hill, New York	1941
Souther, James W	Technical Report Writing	John Wiley & Sons, New York	1957
Sherman, Theodore A	Modern Technical Writing	Prentice Hall, Englewood Cliffs	1955
Shurter, Robert L. and others	Business Research & Report Writing	McGraw Hill, New York	1965
Smith, Richard, W	Technical Writing	Barnes & Noble, New York	1963
Turner, Rufus P.	Technical Report Writing	Holt, Rinehard & Winston, New York	1965
Turner, Rufus P.	Grammar Review for Technical Writers	Holt, Rinehart & Winston, New York	1964
Ulman, Joseph N Jr	Technical Reporting	Holt, Rinehart & Winston, New York	1963
Van Hagan, Charles E	Report Writer's Hand Book	Prentice Hall Inc., Englewood Cliffs	1961
Ward, Ritchie	Practical Technical Writing	Alfred A Knoff, New York	1968

AUTHOR (S)	TITLE	PUBLISHERS	YEAR
Weil, B. H	The Technical Report	Reinhold Publishing Corporation, New York	1954
Weil B. H (Ed).	Technical Editing	Reinhold Publishing Corporation, New York	1958
Weisman, H. M	Basic Technical Writing	Charles E. Merrill Books, Ohio	1962
Weisman, H. M.	Technical Correspondence	John Wiley & Sons, New York	1968
Wicker, C. V. and Albrecht, N. P	The American Technical Writer	American Book Company, New York	1960
Williams, G. E	Technical Literature	Allen & Unwin, London	1948
Wilcox, S W.	Technical Communication	International Text Book Co., Scanton	1962
Winfrey, R	Technical & Business Report Preparation	Iowa State University Press	1961
Zall, Paul M.	Elements of Technical Report Writing	Harper & Row, New York	1962

Since 1955, the Society of Technical Writers and Publishers has sponsored a Bibliography of Technical Writing. The list includes a broad selection of books, articles, and papers on technical writing, editing, publishing, and related activities

NOTES